GARDENS AND STEWARDSHIP

Thaddeus Zagorski

(Bachelor of Theology; Diploma of Education; Certificate 111 in Amenity Horticulture; Graduate Diploma in Environmental Studies with Honours)

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University of Tasmania

STATEMENT OF AUTHENTICITY

This thesis contains no material which has been accepted for any other degree or graduate diploma by the University of Tasmania or in any other tertiary institution and, to the best of my knowledge and belief, this thesis contains no copy or paraphrase of material previously published or written by other persons, except where due acknowledgement is made in the text of the thesis or in footnotes.

Thaddeus Zagorski

University of Tasmania

Date:

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ABSTRACT

GARDENS AND STEWARDSHIP

The primary focus of this thesis is the local suburban garden. The interactions among gardeners, gardening activity, ethical viewpoints, and environments that take place in this setting are investigated from within the context of the historical traditions and contemporary understandings of stewardship. The foundational premise of the thesis is that people are motivated by an ecological impulse that draws them to be involved with the Earth. It is argued that the ecological impulse is manifested in the space of the local suburban garden. It is also argued that a stewardship ethic is evident in much contemporary gardening practice. It is further argued that this gardening stewardship ethic extends from the *genius loci* of the garden to inform a broader global ecological impulse. Ultimately gardens are portals through which to examine the changing relationship between the human and the more than human world.

Throughout the history of humanity, interactions between humans and the more than human world have resulted in humans altering that world often with damaging consequences. Since hunter-gatherer and early agricultural times, the degree of modification was marginal. More recently however the scale of modification has intensified, manifesting itself as an 'ecological crisis'. This crisis represents a major rupture in the relationship between humans and the more than human world. Some gardens are also identified as contributing to the crisis. Stewardship, as a time honoured and well practiced code of conduct towards the garden, is presented as an ethical basis for addressing the rupture in that relationship.

This study first explores the antecedents and contemporary meanings of stewardship as a means to investigate the significance of gardens in shaping human relationships to with the more than human world. Second, data on species composition and richness in gardens was obtained and used as *critical material evidence* for exploring gardeners' attitudes to, and practices within gardens in Hobart Tasmania. Third, qualitative interviews and case studies with gardeners investigated reasons why people garden, and examined how gardening practices reflect a sense of stewardship. Themes evident in the interviews revolved around gardeners' urge to garden, the implementation of specific gardening practices that have an ethical basis and respect the integrity of the garden, the recognition of the interconnectedness of gardeners, other life forms and processes within the garden, and gardeners' sense of relationship with their garden connecting with the greater garden of Earth. Literature on stewardship was used to inform the analysis of interview material to identify various manifestations of a sense of stewardship in attitudes and practices of gardeners. It is concluded that the garden is a site where various manifestations of the sense of stewardship are evident and that these manifestations of stewardship inform a greater ecological consciousness.

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PREFACE

Genesis

Memory…what an extraordinary gift, or is it just an instinct or a primordial pathway? And why does it seem to be easily harnessed when immersed in a garden, when speaking of nature? Memories of the garden, experiences of it, direct and indirect, have been with me since early childhood.

The 'Skaubryn', *en route* from Germany to Australia. 1951. The ship stopped in the Red Sea or it could have been the Suez Canal; I was looking overboard, seeing huge watermelons being lifted onboard in harnesses by displaced people seeking a new home in exchange for such comforts as pyjamas, sweaters and anything else worth bartering in the equatorial sun. Once the melons were aboard, they were ravenously cut open, juice flowing onto the decks, pips squirming their way out of the flesh, and the green colour substituted by this deep, pink-red, delicious, nectar of the gods. Green, red, and juice. Flavour of fruit, sweetness, fecundity and delights of the tropics, replacing the deprivation and greyness of a ravaged Europe as well as the fetid water of the ship. Where did this fruit come from; how did it grow; why did it leave such strong memories?

Broadmeadows migrant camp. 1952. Standing in a field of grass, an overgrown plot of land that had apparently been a hobby garden of soldiers. Grass stalks wavering at eye level and above my head, in flower, being blown by a fairly stiff breeze, the sound of them swishing, bending around my grass-sized body, tickling my face; the smell of their inflorescence, or was it just the grass itself, pungent, sweet, as if it had been recently mowed, the scent picked up by the wind? The taste, sweet as well.

Macleod. 1953. An ‘outer’ suburb of Melbourne with paddocks and sheep all around our house. The garden given birth to by my father: a timeless connection with his cultural, European roots. His garden, passion, obsession; his space and private thing. What he grew stretched out from his ancestral roots: self-sufficiency with vegetables and fruit trees; flowers for the kitchen table.

Standing in the garden: late autumn or early winter. I am four. The air cold and bracing: pruning time of pear, apple and plum trees. A fire in the backyard, burning of prunings, the smoke choking and acrid, following me around, but also inviting, pleasant and having an unfamiliar sweetness to it. As the smoke curled and wafted its way skywards, my curiosity was aroused. I remember seeing the pruned trees, some bleeding, and I was confused. I asked my father why? Why cut and then burn? He replied that the smoke was incense being offered to God, the twigs cut and sacrificed to produce more fruit. I thought long and hard: I wasn’t as sure. But I knew what it meant to be hurt, and not understand why. Therefore, I endeavoured to love these trees, talking to them on a daily basis, telling them it was alright, and that I would care for them. Somehow.

Babcia: Grandmother. Over many years she was there. She was a ‘nature woman’ and understood: no need to control. She ‘worked with’ gently. She spoke to the plants as if they were people – with great reverence and dignity. She loved the soil: her hands were never dirty, just soiled. It was she rather than my father who taught me about gardening and working in unison with the earth. Together we turned over this soil, slowly feeding it with manures and compost; sowing seeds, constantly weeding. I remember feeling the earth filter through my hands as I crushed the peds, soft and slightly granular, clayey; it was an experience I later came to think of as

cleansing. Babcia it was who taught me to love the world of the garden of plants, and organisms; of soil and manures; of verdancy and fecundity.

Worms were favourite creatures of mine. How I loved to chase them in the clayey soil, play with them, watch them wriggle in my hands and seek safety in the clods of earth when I released them. At other times I was fascinated by seedlings poking their cotyledons through the soil, welcoming their emergence into sunlight and the possibility of growth to maturity. Each day I would venture out to see how much progress individual seedlings had made. With anticipation I waited for the first tomato or cucumber or fruit to appear ripe for picking. With the fullness of spring and the onset of summer I watched flowers bud, bloom, set fruit. Many times did I wait for that first fruit, often hiding it behind and within other leaves so that I could stealthily 'pinch' and eat it before anyone else knew it had ripened; hoping not to get caught in the process. The first fruits of the season, a temptation, stolen, like Eve's apple, consumed as an absolute feast, a delight, filling me with great satisfaction and a mischievous sense of achievement. Cherries, peaches, currants, berries, plums, apricots, apples, and pears; tomatoes, cucumbers, beans, carrots and radishes. I would wait like a thief for the opportune moment. And the delight of that first mouthful of scented, sweet, fruit or vegetable, sometimes juice dribbling down my chin, wiping it way so that no one would see that the thief had come and gone.

Once the fruit and vegetables were producing abundantly, great activity occurred at home. Picking the produce, bringing it indoors for preserving or jam making, or even wine making; whatever was required. Often I would be amazed at the amount of fruit, or the size of a bulging tomato, or some strange growth or imperfection in a carrot. But the memory that lingered most was the texture, colour, and individual fragrance of the fruit. There were many fruit trees in the backyard. Individuals

beckoned to me: ‘climb me, become enfolded into my branches’. I climbed, the branches creaked and swayed; I became part of their rhythm. They were pathways to another world, but this world as well. Greenery hid me. I was consoled by the fact that I was safe here, secure, ‘at home’ and that nothing would hurt me. I sat here lost in this timelessness, listening, and observing birds and insects, flies and bees. Happy.

The front garden. A different world, yet the same world. Flowers and shrubs.

Rozy, Fuksje, Kamilje, Narcyzy, Jasmin, Niezapominajki, Konwalje, Fiolki, Blawatki, Maki, Magnolija, Lilije, Gwozdziki, Klon, Mirt, Glog[1]. So many flowers, unique, personable. I wanted to know, I wanted to study them. So I dissected. I picked, I broke apart the flower and looked at it through a magnifying lens, examining all the strange looking ‘bits and pieces’: the inner world, the outer world.

I played with Snapdragons, placing thumb and forefinger on the bilabiate perianth, pretending the flower was a dog, opening its jaws, biting and growling. I collected pollen from Shasta Daisies, Lilies, Calendulas and smeared it over my clothes, colouring them, only to be admonished by my mother for dirtying my clothes. But it was not dirt! At other times I would pick off the petals from spring flowers and arrange them in neat rows, mesmerised by the audacity of their colour, creating my own ‘rainbow’. I wandered with the flowers, wanting to experience their individual fragrances and scents: some sweet, heady and intoxicating, others more subtle, lingering, and memorable because of the delicate scent. Holiday times, I found myself meandering through the garden all day, hiding, exploring, ruminating upon all

[1] Roses, Fuchsias, Camellias, Daffodils, Jasmine, Forget-me-nots, Lily of the Valley, Violets, Cornflowers, Poppies, Magnolias, Lilies, Carnations, Maples, Myrtles, Hawthorns.

these delights, immersing myself in this world that had become my world.

Kenosis

Adolescence. I grew. I gardened. From Babcia I started to develop a relationship with nature, through the garden, although at that stage I was unaware of what that relationship entailed. From my Grandmother I learned about being conscious and mindful in my interaction with the living Earth: about deep caring, and gentle respect. Her understanding of the Earth, of the workings of nature, sifted into me.

Macleod High School. 1962. Mr Rutherford and the Natural History Club. I knew little of natural history, but in joining the club the temptation was that I would spend lots of time on Wednesday afternoons walking around the Estate and Salt Creek, exploring more of the great unfolding. Observing, touching, smelling, feeling, listening, sampling, collecting, noting all those fascinating aspects of fauna and flora in that large area. For a whole semester I thrived in that Club, my folding into nature, bubbling out. After the semester, numbers dwindled and the Club was disbanded. I wondered why.

Dunvegan Estate just west of Macleod High School and the suburb in which I lived. It was the sixties. The Estate became my new garden, my new backyard. I explored the creek, with its tadpoles and numerous invertebrates; often I came home with a jar of ‘taddies’ only to see them die because they had ‘cooked’ in the jar. The creek itself had many moods. It was either in flood or barely flowing or dry in summer. It would be clothed in green or brown or naked. The creek banks and bed were a multiplicity of colourful silt and clay that I used to collect and mould ‘things’. I used to wonder where the tadpoles went when there was no water: yet they always came

back. The birds that frequented both creek and forest at various times of the year were ever so numerous: ducks, heron, magpies, kookaburras, doves, wrens, spoonbills. Every time I spotted a falcon I would imagine that I could fly and condense the world below me into a microcosm, into an eyeball! Once I caught a falcon that had managed to snare itself on the 'Hills Hoist' at home. It was injured, and I looked after it in an old vegetable box for a week, but let it go in anger after it drew blood on my hand when I tried to pat it on the head without a towel to protect myself.

The paddocks of the Estate ranged with rabbits and many native animals that I never had the chance to fully recognise and name, but I knew them to be endemic to the area. Often I would find places in which to hide and observe these fast, fleeting and shy creatures, hoping that one day I could catch one and make it my pet! I recall a dead tree about twenty metres from the creek, which I would climb and become 'part of', sitting without movement to observe their antics and behaviours.

Larundal Forest just north of Dunvegan. A eucalypt woodland extending for a few square kilometres, where I was able to recognise but not name a range of native trees and plants, the most common being the ubiquitous 'gum'. Any spare moment from school or on weekends I wandered through there, exploring, sitting under trees, sitting in trees, feeling their textured bark, sucking on a eucalyptus leaf, looking at their branches being stressed by the wind, their leaves humming to a universal symphony, stretching skywards, to touch the sun and live. Here and there were grassy patches that on warm days invited me to lie down on their softness, and stare at the azure sky, broken with fleeting white pillows. There was a time when I even considered having my own 'secret' vegetable garden in the forest, but I realised that

it would be a source of food for the local rabbit population and – worse still – an invitation for vandalism.

Near the top of the hill on the Estate was a small pine plantation. It became my sacred space, my sanctum, a sanctuary from which I could observe ‘my world’: I cannot explain why, but it took me back to Europe like an ancestral imprint. From the onset of puberty, I would sneak out through my bedroom window at midnight and spend a couple or more hours sitting in quiet, meditating, listening to the wind shimmering through the pine branches, smelling the needles. Or I would lie on the pine-needled bed and gaze at the moon, smiling, filtering its silver golden beams through the pine branches. I developed an attachment to and conversed with ‘Sister Moon’, hoping to glean insights into why I felt so safe in this ‘my’ world. It was that same pine forest that made me aware of the produce of the greater garden: mushrooms in autumn, wild sorrel for soups, and blackberries in summer.

But things were about to change. In my middle adolescent years I discovered a side to nature that I had vaguely experienced, and knew of, but had never contemplated its meaning within the greater aspect of the unfolding. There was a shift from nature as benevolent and benign to something more. An emptying occurred.

Early January 1969. The Lara bushfires in Victoria. I was in the Grampians in Western Victoria at a scout camp. Bushfire! 400metres from our scout campsite it started and raged unabated for almost a week. Here was a phenomenon, a bushfire in a place of exquisite beauty, ‘wilderness.’ A place seemingly untouched: and now, the acrid, annihilating smell of wild fire: not safe, not gentle.

The destruction wrought as a result of the fire was horrifying: scarred landscape, skeletonised trees, embers smouldering, ash, blackness and pungency, dying animals.

I remember being angry because the fire had destroyed ‘my bush’, my world, had disengaged me from my romantic and aesthetic relationship with nature, and had burnt away my sense of safety. I felt scarred, betrayed by the ‘othersidedness’ of nature. Yet within a year this devastated area was transformed into an oasis, of new life bursting forth, of possibilities, of hope, of the continual unfolding.

This experience of regeneration came to inform my understanding of why, during my childhood, things had not always gone the way I expected them to in my garden at Macleod; times when life in the garden was hard. I had glossed over such times. But as I matured I came to understand the seasons; the changes of nature, the changes in nature. I learned that for every death in the garden there would always be a beginning; that pruning was absolutely essential to the health of a fruit tree and that the trees could not prune themselves – they needed a steward.

Gardening became stewardship.

Pleroma

Nenewee village: 1975. A 50 kilometre walk from Bema, just over the border of Papua in the northern part of the Gulf Province. I had just arrived as a seminarian on a medical patrol and brought with me a .22 rifle, keen to show the locals, the ‘power’ of this artefact. There in the village ‘square’, early the morning after arriving, I stood, rifle in hand, a vision out of a Western movie, with the locals around me. My target, a breadfruit tree in the middle of the village. I fired three shots into the trunk, much to the applause of my audience, who were mainly young ‘warriors’. ‘*Hanama, hanama’*, echoed the sound of an old voice from one of the huts. ‘Go away, go

away'! 'Old man Nenewee' came storming into the centre of the village gesticulating with his arms, shooing away the gathered audience.

'*We are part of that tree; that tree is part of us*'…

And so started a three-hour lecture, an admonishment, a challenge, a lesson into the 'greater unfolding', into a sense of stewardship that transcended the Genesis account with which I was then so familiar.

We listen to the 'hikoapa' (spirit), of the earth because she gives us wisdom and understanding about how we should care for her. How do we do that? We turn our faces to the sun and recognise it as the source of life. We listen to the wind; it conveys many messages about how we should treat those around us. We feel the rain and it fills us with joy because we know that our sources of food will not die of thirst. We know the soil has to be carefully cultivated so that we do not starve it of what it needs to ensure all will grow and we remain in the circle. We observe, we feel with our hearts, we touch with our hands; we come to know how we are part of the earth, and she a part of us. We communicate with all living things; there is a bond, a linkage between all living species. There is no separateness; we are all one, affecting one another, entwined with one another.

This tree provides us with food, shade, shelter, building materials; it houses birds and other creatures; it is kind and generous to us. We tend the tree, look after it, and give it thanks for being so beneficent to us. We are part of it, it is a part of us. It lives, we live; we feel pain, it feels pain; we starve, it starves; it dies, we die.

We are to be kind to the 'hikoapa', for she is kind to us; we are to treat her with utmost respect, and she will do the same for us. We are to not abuse her but to cherish her…she fills us with abundance and goodness.

This experience was pivotal for me, a Copernican revolution. It challenged my long-established mindset and inaugurated a new consciousness of nature: how I should rethink what it meant to be a steward. I was filled with deep respect, reverence, empathic listening. I sought to become reflexive, critical, and sensitive to how these Kamea people understood their relationships to the greater garden of nature. I started to read nature literature and philosophy; to ponder the questions what does it really mean to care for the garden and what, therefore, is stewardship?

Perth, Western Australia. 1997. I taught horticulture in the suburb of Murdoch at the College of Technical and Further Education, or TAFE. The use of chemicals on the soil and plants greatly disturbed me. The College had large areas of land devoted to floriculture, vegiculture, turf and orchards. Chemicals were used daily. I smelt and even felt nauseous from their lingering residue – how could they benefit the Earth? I knew the rhetoric surrounding their 'safe use' but was far from convinced. It was not natural. I looked at the health, freshness, greenness and productivity of the permaculture gardens at the College, which relied solely on 'natural' manures and pest control, on more natural or organic processes of gardening. Here was balance. Here the web was connected; there was interdependency; cycles were respected. The difference in taste between vegetables grown in the permaculture area and the general vegiculture area was pronounced. The use of chemicals caused me to reflect on modern tendencies to 'short-termism' and myopia. I resolved not to use chemicals.

CODA

I have always been a gardener and continue to be so; I have worked as a gardener, taught horticulture, been involved in landscape and garden design. Through this I have also been and continue to be called an ‘Earth person’. I still experience gardening and the bush through the senses and feelings of a child. I still climb trees. I have had and continue to have many experiences with the great unfolding of the Earth, my greater garden. I sometimes feel that I have immersed myself in nature in ways that are indescribable; they have become a part of my psyche. But forming over many years was that deep sense and awareness of stewardship: a concept I am still trying to understand more fully. This thesis is one manifestation of such labours.

1 INTRODUCTION

FOUNDATIONS

This research works from a foundational premise that an ecological impulse motivates people to be involved with the Earth. It is argued that the ecological impulse in the first instance is manifested in the space of the local suburban garden. The garden may be viewed as one space where interactions between the human and what Abram (1996, 22) calls the *more than human world* enrich the former. In this sense, it is a space through which the more than human world becomes a source for certain ethical impulses, among them one termed 'stewardship'. I perceive stewardship as an ethical way of interacting with the garden characterised by deep care and respect as well as mindfulness, immersion, reverence, love, compassion and celebration.

In what follows, I seek to address gaps in research about stewardship as a relational way of being and an approach to the practice of gardening; I also seek to examine how stewardship may inform a wider ecological impulse. My primary focus is upon contemporary suburban gardens and gardeners in Hobart, Tasmania, in Australia. This empirical work is embedded in an extensive theoretical and philosophical literature through which the wider significance of local values, knowledges and practices unfold.

As it relates to gardening, stewardship comprises varied traditions and practices, but its study has attracted little academic attention, being mostly confined to ecological theology and philosophy. In particular, no research appears to have been conducted

into stewardship as a contemporary expression of the relationship of suburban gardeners to their gardens, although Pollan (2002) suggests that the suburban garden is the *genius loci* from which a new (global) environmental ethic may evolve. Worrell & Appleby (2000) without developing their argument, postulate stewardship as a potential starting point for a new environmental ethic.

Gardens – including those of the suburbs of western cities throughout the world – are rich social, ecological and spiritual constructs. Much has been published[2] about garden history and design, famous gardens of the world, plant selection, and practical approaches to gardening. Less has been written about the relationship of gardening to what Hay (2002, 1) terms an ecological impulse – a yearning to engage with the Earth in ethically meaningful ways. What, for example, are the culturally and historically specific motives underlying gardening? How do gardeners give meaning to the garden spaces that they help to create, and (how) do gardeners extrapolate from these spaces to wider ecological and ethical questions? How have particular social, cultural or economic forces – the commodification of gardening not least among them – influenced garden practices and the attitudes that inform them?

By conversing with gardeners, and by auditing the species composition and richness of their gardens, I seek to make empirically verifiable connections between how people communicate to others, how they practice gardening and how such practices reflect certain investments in stewardship. This study of suburban gardening in a small antipodean city examines stewardship as it relates to gardens, and is also a treatise on local responses to global ecological issues. It is not an attempt to heroise

[2] For example see *inter alia*: Aitken, 2004; Barrett, 1980; Bisgrove, 2006; Brown, 1999; Hobhouse, 2002; Hoyles, 1991; Shum, 1940; Strong, 2000; Thacker, 1979.

suburban gardening, since a number of commentators have argued that some suburban gardens and gardening practices are ecologically unviable. In Australia for example Seddon (1997, 183) argues that ‘most Australians are not gardening in an ecologically responsible way’. A disconnection of people from the more than human world is evident in small suburban gardens as it is on a larger global scale. This disconnection may both constitute and reflect a range of cultural, economic, political and environmental practices whose cumulative effects have been to endanger human and ecological well-being (Weston, 1994). Nevertheless, there is sufficient evidence to suggest that suburban gardeners may seek to position their gardens and practices of gardening as central to personal approaches to (re)establish conscious relationships with the more than human world (Berry, 1989; Bhatti & Church, 2004; Doolittle, 2004; Freyfogle, 2004; McGreevy, 2000; Seddon, 1997; Weston, 1994). My work adds to that evidence in new ways.

QUESTIONS, STRUCTURE AND DESIGN

In light of the foregoing, two questions drive this work. First, among contemporary suburban gardeners in Hobart, what evidence is there to suggest the existence of a sense of stewardship in their gardens and gardening practices? Second, does that sense of stewardship, where established, work outward from the garden to inform a wider ecological impulse and, if so, to what effect?

This wider ecological impulse (described in greater detail in chapter two), is best described by Hay (2001, 3), as that 'pre-rational impulse', that not only causes people to respond to the destruction of the biosphere, but also is a 'genetic endowment' (Dubos 1980, 9) that recognises the time honoured relationship of people with the Earth and the natural environment. Its focus is an embodiment in and deep feeling of caring for the Earth as home for all living things.

Before addressing the two research questions I need to emphasize that the purpose of the preface at the beginning of the thesis was an autobiographical expose of my life-long interests in gardening, stewardship and involvement in the more than human world. It was the raison d'être and a portal through which I could examine and explore in greater detail these inherent interests of mine.

In addressing these two questions, I undertook six tasks that are best explained by describing the structure of the rest of this work. *First*, I examined the antecedents of modern stewardship and have sought to provide an expanded interpretation of its qualities. Thus, in chapter two I present a comprehensive overview of stewardship as a relational ethic of gardeners to their gardens and as a means to enhance the relationship between people and the more than human world given evidence of a

global ecological crisis. The impact of that crisis is then narrowed down to certain values, attitudes and practices that inform the creation and maintenance of suburban gardens, exposing some as ecologically unviable and contributors to the crisis. Stewardship is presented as one possible approach to address the crisis.

Second, I drew insights from the literature and sought to ground the study in a mixed-method empirical research. Over the period from October 2003 to September 2004, and focusing on suburban gardens in Hobart, I first completed an audit of 134 gardens. Chapter three presents findings on species composition and richness in these gardens which provide *crucial material evidence* of the garden as a microcosm of the Earth. Species composition, richness and diversity also give substance to the rhetorical and practical engagements that gardeners have with their gardens. The garden typology developed from the gardens that emerges from the audits undertaken in 134 gardens testifies to the range of influences upon gardeners in their choice of specific plants, and highlights the attachment that gardeners have to their gardens. Chapter three also provides descriptions of the gardens and a profile of these gardeners' identities. My reason for situating this quantitative chapter between the philosophical underpinnings of stewardship (chapter two) and the material from the qualitative interviews (chapters four and five) was to emphasize that a study of gardens starts with why gardeners have a garden. When gardeners speak about their gardens their point of reference are the plants that thrive there.

Third, I investigated the history of gardening in Australia over the period from the arrival of the 'First Fleet' in 1788 to the 1980s, and that work (on which there is much scholarship already) is provided as background context to chapters four and five in a small historical sketch that I have entitled Interlude, which follows chapter three. I need to underscore that the role of the interlude is not to explore the history

or contextualise the role of suburbs; it is but the briefest look at the evolution of gardens and gardening in Australia, albeit within a suburban context. I acknowledge here that the development of gardens in Australia is inextricably bound with the development of suburbia and the suburban housing block, while my focus is on stewardship as expressed in gardeners' values, their practices and their gardens.

Fourth, between December 2003 and November 2004, I undertook in-depth interviews with 67 gardeners drawn from the larger sample described above to explore their attitudes to gardening, practices, factors that influenced them to take up gardening, and factors that influenced their understanding of larger environmental issues (chapters four and five). Noteworthy in these chapters is the focus on cultural, familial and lifestyle influences, the commodification of gardens and gardening, and the ways in which gardeners seek to resist such commodification. The 67 gardeners with whom I undertook interviews and those involved in the five case studies, I refer to as research partners throughout this project.

Fifth, from November 2004 to January 2006, I engaged in repeated and intensive conversations with a small number of gardeners drawn from that 67 and selected on the grounds that I interpreted their responses to earlier interview questions as especially insightful in relation to gardening as stewardship (chapter six). Five case studies are presented of gardeners whose values, ideas and gardening practices offered insights into stewardship as practised in the garden. These five gardeners though not overly familiar with stewardship as a specific set of formalised concepts that have been written about in theology, environmental philosophy and related disciplines, nevertheless had sufficient knowledge of stewardship, to be able engage fully in the participatory action research.

Sixth, in chapter seven, I reviewed the research design and questions, and summarised the findings of the project by synthesising the theoretical perspectives of stewardship, the understandings of stewardship held by gardeners, and the gardening attitudes and practices of gardeners. I also posed some questions, extracted from the findings and my own reflections that may be the basis for future considerations and explorations of gardens, stewardship and ethics.

The design of the research involved a number of interrelated steps. In dealing with secondary sources of information, I created a list of key terms by which to search databases for references to electronic and print journals, scholarly monographs and other texts, government reports, articles in the news media, and the Internet. Some of those terms (and derivations of them) were nature and the earth, environment, stewardship, gardening, ecology and urban ecology, suburbs and cities, ethics, relationships, modernity and, later, commodification, consumption and consumerism; all selected on the basis of my initial interest, and research scope and parameters. I then developed a short-list of around 400 texts for reading and analysis which I proceeded to collect, later setting aside around a quarter of those because of their limited relevance to my work. The remainder were catalogued and worked through, during which time I also used their bibliographies to identify an additional hundred items for analysis. Around 300 secondary texts were finally examined in-depth for the information and insights they provided in relation to the research questions posed above and views both confirming and disconfirming of my own foundational assumptions and questions were accounted for. The review process also informed each phase of the empirical work from design to analysis and synthesis.

In terms of primary data collection, the sampling frame used to select gardens and gardeners was initially based on a combination of environmental and demographic

variables that characterise the suburbs around Hobart. Environmental variables included five vegetation types, rainfall, slope and block size. Demographic variables incorporated the ages of houses or gardens, and demographic characteristics of gardeners. Twelve suburbs were finally selected: the distance of these suburbs from the CBD ranged from three to 36 kilometres (figure 1.1).

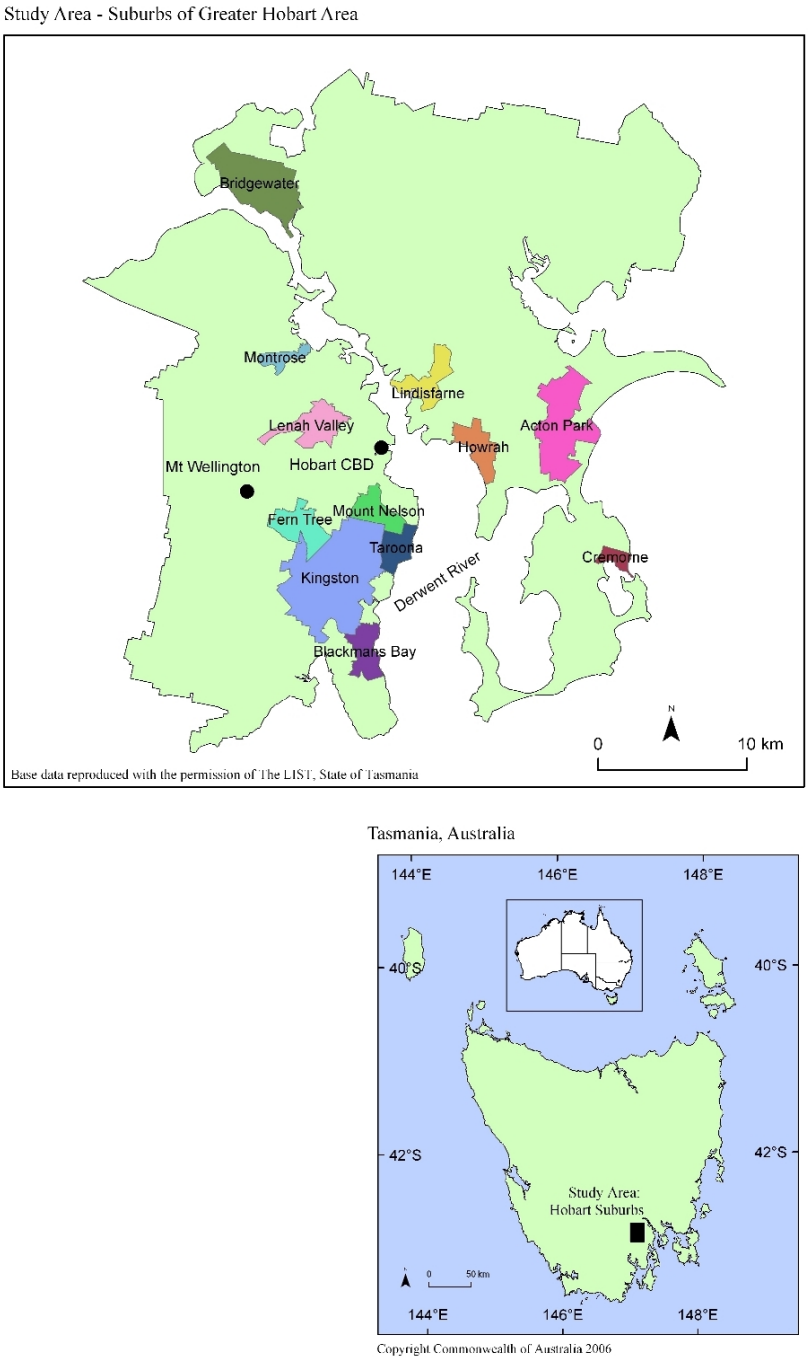

Figure 1.1 Hobart Study Area and Suburbs

Approval to approach householders to participate in the study was obtained from the Tasmanian Human Research Ethics Committee in October 2003, a process required by the Australian Government for all research involving 'human subjects'.

Recruitment of potential research partners occurred by randomly door-knocking among houses on randomly selected streets in the suburbs chosen and issuing households with information sheets (Appendix 1.1) about the project. In total, 208 houses were door-knocked in a period of four months. After a period of three to four months, ten percent (n.20) of the householders canvassed had agreed to participate in the research, most householders refusing because of a lack of time or interest. In order to increase the profile of the project and the chance of attracting participation, a feature article on the research was written on my work in Hobart's Sunday newspaper, *The Sunday Tasmanian*, inviting involvement in a 'survey' of gardens around Hobart (Knowler, 2004). The response was immediate and secured a significant number of the balance of the 134 households, the rest being engaged through snowball sampling thereafter. Interestingly, although for reasons I cannot determine most of the research partners who replied to that feature article lived in suburbs that I had selected in the first instance. In the final analysis, then, what was originally to have been random sampling (to provide validity for the species composition of gardens associated with environmental variables), became purposeful and specifically volunteer sampling (Patton, 2002)[3].

[3] Patton (2002, 243), describes 16 types of sampling strategies. Volunteer sampling may be regarded as a form of opportunistic or emergent sampling that focuses on new forms of sampling derived from aspects of field work.

The first step in the empirical research, namely the garden audits, was completed for all 134 households. Each was visited on at least one occasion (a few were visited up to three times) and quantitative methods of data collection were used to identify plant species in all. By walking through the garden – sometimes with the gardener – a species listing was collated of all the plants found in both front and back gardens. The only plants omitted from the listing were grass species of lawn and common 'garden weeds' such as dandelion, spurge, oxalis or knotweed. 'Environmental weeds' such as cotoneaster, boneseed, broom, banana passion fruit (Zagorski *et al.*, 2004) were included in the listing[4]. Species were either identified *in situ* or, where that was not possible, once permission was obtained from gardeners to take samples, at the University of Tasmania. Species were listed in a spreadsheet correlating them with the gardeners' demographic details. A total of 2340 species were identified in the 134 gardens. These data on species composition and richness are the focus of chapter three.

Species composition surveys of the 134 gardens also involved observing and noting a range of garden features and characteristics: landscape structures, design and layout, canopy layers, the presence of lawns, evidence of different kinds of gardening practices such as mulching, weeding, soil cultivation, water use, composting, vermiculture and the use of poultry for soil enrichment. Garden sheds were also

[4] The distinction between these two weed types was a matter of perception, as well as relationship. Some gardeners continued to wage the perennial battle with common garden weeds, and saw these as a major nuisance in their gardening practices. Other gardeners were either unaware of the potential dangers of environmental weeds or did not consider them to be a significant nuisance. A small number of research partners claimed a relationship with environmental weeds, noting they were as much a part of the garden as other plants.

audited for further evidence of the types of garden practices and products used in the garden. Observations of garden features and characteristics are not part of the statistical analysis presented in Chapter three. Rather, insights from them are refracted through the literature and are reported in chapters four and five, in particular. Where there was evidence of significant and consistent involvement in gardening practices – such evidence being overt in high levels of species composition and richness and gleaned from gardeners' self-reported time, effort and commitment invested in gardening – it was decided to ask for further involvement in the study through an extended interview as indicated in information sheet two (Appendix 1.2). Sixty seven gardeners[5] were selected with whom I conducted interviews about gardens, gardening practices and implicit or explicit signs of involvement in stewardship.

Qualitative research methods provided the vehicle for the in-depth exploration (Denzin & Lincoln, 2000; Dunn, 2000; Patton, 2002; Winchester, 2000) of the values, beliefs, feelings, attitudes and behaviours of gardeners. Among the techniques in qualitative research, the interview process 'is one of the most common and powerful ways to understand our fellow human beings' (Fontana & Frey, 2000, 645; see also Dunn, 2000; Patton, 2002). The interview is also regarded as 'a universal mode of systematic inquiry' (Holstein & Gubrium 1995, 1), no longer restricted in use by social scientists (Fontana & Frey, 2000). It is through the agency of the interview that story-telling evolves as a developmental aspect of the

[5] I could have extended the interview process to include some of the remaining gardeners, but reached saturation point approximately 50 percent of the way through the total sample – saturation being a term in qualitative research to describe when very little new information is being obtained from each research partner.

interviewer-respondent relationship (Fontana & Frey 2000; Fuller, 1999; Gubrium & Holstein 1997; Spradley, 1979). Story telling in the interviews became a 'bridge for connecting people to culture, one's roots, nature, and [a means] to remember family history and experiences' (Bausch, 1984, 33-36).

Interviews were semi-structured, leaning towards the unstructured (Dunn, 2000; Patton, 2002), allowing me to create an atmosphere of ease and the opportunity for a personal engagement with the research partner. This personal engagement focused on wanting to understand research partners' motivations rather than just a description of what they did in their gardens. While my interaction with research partners was informed by a series of themes posed as questions and informed by the literature and the garden audits already undertaken, our mutual examination of those themes occurred in an open-ended manner (Dunn, 2000; Patton, 2002; Saugeres, 2000). This approach maximised conversational reflection and the elicitation of nuanced responses, what Fontana and Frey (2000, 642) describe as discerning 'a residue of ambiguity'.

Most interviews lasted in excess of two hours ensuring that the 'field of inquiry was not limited' (Fontana & Frey, 2000, 653) to the garden but enabled us to pursue other themes relating to research partners' understandings of the Earth and environments, as well as of issues related to urban ecology, ethics and private property rights. The in-depth exploration of these themes was facilitated by what Fuller (1999, 221) called 'integration within the researched community'.

Material from the interviews was collected using hand-written notes taken during conversations. Although previous experience (Zagorski, 2002) had shown that people were not comfortable about our conversations being taped, given the tendency

among partners to wander with me into the garden to show me some aspect of what was being discussed, taping our conversations became impractical. My notes of those conversations were a mix of verbatim quotes and detailed notes about both the content and tenor of gardeners' comments. Many years ago as a result of a shorthand process I developed, I was able to record lecture notes quickly and word for word. I used this shorthand process in recording the words of the gardeners.

After interviews were complete, within a few days they were transcribed as electronic documents. This immediacy was crucial, firstly in ensuring that the ideas, meanings, feelings and nuances conveyed by gardeners were recorded with the greatest possible accuracy. Secondly, that the freshness of my memory and experience of the interview was retained and consequently recorded. A key term search was used in the transcripts to code themes and sub-themes that matched the key terms of the literature review. Each theme was listed and extracts from transcripts were nested under them and each extract and theme was then referred back to the wider literature in an iterative fashion. Insights from that process inform the chapters following this, but are especially the focus of chapters three to six, in which quotes by research partners are distinguished from my text by being presented in *italics*.

A final element of the empirical work that constitutes this research is an action research project undertaken in the form of five detailed case studies and largely reported in chapter six. At the start of the initial interview process, I was keen to establish how many people might be interested in further in-depth exploration (which included their desire to change and extend their gardening practices) of the issues posed by my research questions. I quickly realised that there would be few able to make the necessary commitment of time to such a lengthy enterprise. In the end, five

groups of gardeners – three couples, a single person and a small group of friends – were identified as willing to be engaged in the action research. These five groups also had a further information sheet (Appendix 1.3) distributed outlining the requirements of the action research. The ethics clearance for interviews extended to repeat interactions with the action research participants, and therefore I was able to spend an average of half a day to a day a month with each group for a period of 15 months. During these days, my work was focused on extended discussions with action research partners about gardens, gardening and stewardship. These discussions explored the practical components associated with gardening and stewardship as well as some of their ideas that contributed to a deeper understanding of stewardship. Notes of our discussions were taken throughout the day and during breaks, and as soon as practical after leaving their company. The first case study had a strong practical element, but the other case studies involved minimal practical engagement apart from some 'pottering around' with members of the groups, as well as demonstrations of horticultural and cultivation techniques such as pruning. The one definitive variation from the 67 interviews was the depth of the relationship (Crapanzano, 1980) I established with the five groups of gardeners by empathising with their ideas and practices on gardening, and the sense of stewardship they revealed. This establishment of an in depth and personal relationship with research partners was similar to and 'indistinguishable from ethnographic approaches' (Winchester 2000, 6). However, the intention of this action research was not motivated by an ethnographic[6] method of research which is described as a 'primary

[6] Herbert, (2000), Patton (2002), and Tedlock (2000), provide extended commentaries on ethnographical approaches to qualitative research. These commentaries provide insights into the

method of anthropological inquiry' (Patton, 2002, 81). I did not consider myself an anthropologist, and I did not believe that my project involved immersing myself into the lives of my research partners to the same extent as would be the case of cultural and social anthropologists who study and live with people of other culture for extended periods of time.

Story telling of personal histories and gardening experiences was also a vibrant feature of the sessions and enriched the whole study. The process of analysis of interviews described above was applied to the five case studies so that themes were derived from discussions and then folded through insights from the literature and field observations.

My purpose in choosing the particular methods for collecting data and interview material was twofold. First, the processes I chose fitted in with my general personal interest in plants, botany and ecology as well as a predilection for personal involvement with people, either from a pastoral perspective or a sharing of common ideas about a range of subjects, in particular gardens and spirituality. I have always been intrigued by the types of plants that people choose to grow in their gardens: a quantitative species audit slotted in with that interest. The species audit then allowed me to further involve myself with gardeners, and discover motivations for their interest in gardening and explore possibilities for newer knowledge and ideas.

Second, I perceived the three main collecting methods of data as a tiered process. Each tier delved deeper into the craft of gardening as described by gardeners. I

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distinctive features of ethnographical inquiry that distinguish it specifically from action research methods.

started with an innocuous listing of plants: gardeners are always interested in discussing and showing off the plants they grow. This interest in plants was followed by a greater involvement with the gardeners, by extracting more information about why they garden and grow certain plants through a semi-structured interview approach. Finally, being able to involve myself in a participatory and reciprocal process allowed for my own further learning and reflection on gardening and stewardship in a deeper and more personal way of engagement with gardeners. It also allowed me to share my ideas with a group of select people with whom I was able to empathise in their understanding of gardens and stewardship.

Finally, in chapter seven I bring together academic literatures, my garden audits and observations, and interviews with research partners in order to understand the relationship between ethical practices in the garden and an ethical understanding of the Earth. I argue that in small specific sites such as suburban gardens highly personalised practices of gardening embody the stewardship ethic and the underlying ecological impulse of gardeners. This stewardship ethic is emergent and explicit and points to a deepening understanding of the relationship between gardener and garden. This ethic also manifests itself as a means of relating to the Earth.

2 STEWARDSHIP AND THE GARDEN OF EARTH

OF ECOLOGICAL CRISES AND IMPULSES

McDonagh (1986, 80) refers to earth as 'the garden planet of the universe'. Genesis (2:9) describes the Earth as a garden, the archetypal Garden of Eden. Merchant (2004, 1), states we are trying 'to reclaim the lost Eden, by reinventing the entire earth as a garden'. Other scholars, implicitly or explicitly have also referred to the Earth as a garden. Berry (2000, ix) speaking of the need for humans to have an intimate relationship with the earth refers to the earth as 'the garden planet'. Lambert (2004, 107), states that 'the Earth is to be cherished as the garden planet'. Numerous other descriptions of the earth allude to it as a garden (de Grasse Tyson, 2000; Denison, 1996; Foale, 1985; Primavesi, 1991; Ruether 1992).

The garden planet is, however, beset with problems variously described as environmental crises, ecological crises, a global eco-crisis, even the destruction of the biosphere (Attfield, 1983; Caldicott, 1992; Callicott, 1999; Carson, 1963/2000; Ehrlich & Ehrlich, 1991; Franklin, 2002; Hay, 2002; Macy, 1991; Passmore, 1974; Ruether, 1992, 2000; Suzuki, 1990, 1993, 2003). These descriptors refer to 'a cleavage between man and nature… an addiction to the consumption of the Earth' (Gore, 1992, 221); they are about 'a disconnection, a distancing' and 'a loss of connection with the more than human world' (Weston, 1994, 3, 85); they are about a breakdown in ethical relationships (Marsh 1864/1965; Primavesi, 1991; Ruether, 1992; Suzuki, 1998) between humans and the more than human world. Moncrief

(1970, 511), identified human culture as the reason for the distancing from the natural world: 'the forces of democracy, technology, urbanisation, increasing individual wealth, and an aggressive attitude to nature relate to the environmental crisis'. Russell (1994), amongst others adds that it is human greed, aggression and arrogance that contribute to the cleavage – attitudes which diminish the relationship and integrity of the human to the more than human world.

The symptoms of the crisis include, *inter alia*, social inequality, resource depletion and degradation, pollution of air, land and water; loss of geodiversity, biodiversity and cultural diversity as human communities and settlements appear to become increasingly homogenised (while paradoxically exhibiting serious forms of resistance to such trends); and systemic and persistent changes to ecosystem processes. Overpopulation and the multiple consequences of overpopulation have also been described as contributing to the crisis (Ehrlich & Ehrlich, 1990; Caldicott, 1992; Maguire, 2000; Suzuki, 1997, 1998).

That there is an 'environmental crisis' is, according to Suzuki (1990, 152) 'no longer in dispute'. O'Riordan (1995, 4) has also noted that 'environmental concern has become one of the most profound and enduring social themes' of our times. Although 'our species has a long history of causing ecological destruction' (Penn, 2003, 278), the extent and speed with which humankind is endangering the functioning of life systems of the planet is alarming (Hay, 2002; Suzuki, 1990). The crisis has been variously identified, described, acknowledged and responded to by many individual and institutional actors – scholars, scientists, governments, private organisations, and non-government organisations among them. Among other forms of collective expression that have flowed from its identification and recognition as such, the ecological crisis has been the stimulus for numerous conferences,

noteworthy among them several United Nations meetings on environment and development dating from the 1970s[7]. As a result of such international diplomacy, governments around the world now legislate to curb the negative impacts of human activity upon the environment. Businesses are taking on board environmentally responsible practices as a means to address the crisis, but to greater or lesser extent their efforts – like those of government – are sometimes labelled a 'greenwash' by those who are, in their turn, described as members of the radical environmental fringe (Beder, 2000). Environmental education is now a central component of primary and secondary education in many countries, with environmental science a growing area of University teaching and research.

Weston (1994) observes that there is much rhetorical investment in these debates and actions addressing the crisis. However he stresses that there are, nevertheless, more than rhetorical justifications for the need to find solutions to the challenges faced, since 'the very existence of all life forms on this planet' may be at stake (Tucker & Grim, 2005, xv). There is recognition and acknowledgement of the moral nature of responses to address the crisis. Callicott (1999, 7), amongst other scholars[8], argues that 'human beings have moral obligations to nature'. Whether one attributes the increase in environmental consciousness, thought and action to genetic predispositions, or a sense of moral obligation or other sources, it is clear

[7] For example, The Brundtland Report (WCED, 1987); Kyoto Protocol (UNFCCC, 1997) and The Rio Earth Summit (UNCED, 1992).

[8] Other scholars who address the moral implications of our relationship to the more than human include, Cloke & Jones, 2003; Cowdin, 2000; Dewitt, 2000; King, 2003; Nash, 2000 and Passmore, 1974.

‘environmental movements are becoming a global force’ (Suzuki, 1998, 51), despite the complex and contested nature of this environmentalism.

What then is the motivation behind this global force of environmental movements? Dubos (1980, 9) alludes to a genetic endowment that ‘enables us to acquire the kind of organic, holistic knowledge… of the natural environment’, but does not suggest that such an endowment also preserves humanity from the consequences of its actions. Wilson (1993, 32) describes the motivation as ‘an innately emotional affiliation of human beings to other living organisms’. Hay (2002, 1) suggests that it is an ‘ecological impulse’: one that is not, in the first instance, theoretical nor even intellectual but pre-rational – a deeply felt ‘consternation at the scale of the destruction wrought, in the second half of the twentieth century, upon the increasingly embattled life forms with which we share this planet’ (p.3). In my estimation – and not least because research partners refer to them of their own volition – three manifestations in ethical writing of this ecological impulse are noteworthy: Leopold’s land ethic, Lovelock’s Gaia hypothesis and Wilson’s ideas about biophilia.

Leopold’s land ethic (1949/1989) is understood by some scholars (Callicott, 1989; Freyfogle, 1989a; LaFreniere, 2005) as the modern starting point for a new environmental ethic that captures the ecological impulse. In many ways the land ethic evolved out of his role and long experience as a forester and someone intimately involved with the Earth. Callicott (1989, 5), a strong adherent to and promoter of the Leopoldian ethic, states that Leopold’s ‘ecology was a profound way of perceiving and cognitively organising the natural world’ and that, as Leopold’s understanding of ecology deepened, so too did his values change to infuse ecology with ethical meaning. Thus Leopold was among the first in modern Western history

to argue the widening of the sphere of ethics to include the natural world (Hay, 2002).

By 'land' Leopold meant the 'enlargement of the boundaries of the community to include soils, waters, the plants and animals' (1949/1989, 204). Leopold's ethic, contextualised within the notion of community – the land community – focuses on ecosystem integrity. That integrity[9] includes recognition of the intricacy of various interconnections between and among the organisms of an ecosystem: linkages, webs and food chains that constitute what he calls the biotic pyramid (1949/1989). He falls short of stating that these linkages reflect a dynamic, living organism at work, as has been expressed by the Gaia notion, described shortly. Leopold advocates for a change in attitude to the land – a renewal of relationships with the land based on behaviours reflecting an understanding of ecosystem processes, and embellished with humility, love, respect and admiration. That change in attitude includes the recognition that 'the Earth is a bountiful community of living beings of which we are but one part' (Roberts & Amidon, 1991, 38). Leopold (1949/1989, 204, 225) states that the land ethic:

> changes the role of *Homo sapiens* from conqueror of the land community to plain member and citizen of it: it implies respect for fellow members, and the community as a whole … [Thus, a] thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community; wrong when it does otherwise.

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[9] Mische (2000), writing from a different context, argues about the integrity of creation, creation understood as the community of life on Earth. She calls for an ethos and ethic of ecological responsibility to address the crisis (602).

The changing of roles alluded to by Leopold rests upon a conscious understanding of the origins and the continued embodiment of the human within the more than human world. Parenthetically, Leopold's work came to note in the 1970s, and gained considerable prominence in the 1980s and 1990s, especially through Callicott's (1989, 1999) works. Similarly environmental thinkers like Berry (1981), Freyfogle (1998a & b, 2004), Jackson (2002), and Pollan (2002), who are also gardeners and agriculturalists, attest to a re-appraisal of the concept and value of land (in the Leopoldian sense) as part of a renewed ethical stance towards the more than human world. Their contributions and reflections on Leopold, and their practical involvement in the land, encapsulate the ecological impulse, providing further understanding of the relationship of humans to the more than human world.

Lovelock's (1987) Gaia hypothesis, first formulated in the late 1970s, is another example of an ethical response to the ecological impulse. A physicist by training and philosopher-polemicist by disposition, Lovelock analyses the biospheric and geospheric systems of the planet into a dynamic whole. Sagan and Margulis (1993, 352) state that 'Gaia, is the nexus and nest, the global life and environment, the planetary surface seen as body rather than place' and that on Earth, 'the atmosphere, hydrosphere, surface sediments, and all living things together (the biota), behave as a single integrated system with properties more akin to physiology, than physics'. Gaia represents the planet as a single organism that extends the boundaries of what scientists have traditionally held as defining what an organism is. Stemming from the name for an ancient Greek Earth goddess from whom everything else came forth (Suzuki 1997) the concept has been extended by some from a theoretical scientific construct into an ecological spirituality (Nash, 2000; Ruether, 1992; Skolimowski, 1993). Ruether (1992, 252), for example, highlights the relational side of Gaia,

observing that ‘our kinship with all earth creatures is global, spanning ages, linking our material substance with all beings gone before us, and thus linking us into the living Gaia’. She also contends that humans, endowed with an impulse to consciousness and kindness, should heed the laws of Gaia and be prudent in the way we interact with Gaia ensuring that human intervention is not deleterious to Gaia. Gaia *as relationship* connects with the broad base of stewardship. Similarly, Suzuki (1997) highlights this Gaian connection where he writes of the elements that are constitutive of and interactive with life on this planet: air, water and soil, and the place and role of the human in this context.

Wilson’s Biophilia hypothesis (Kellert & Wilson, 1993) underscores the intimate and immediate connection of human beings to the natural world. Wilson, an entomologist-turned-philosopher, is an intellectual giant with wide ranging interests in scientific areas of human endeavour, and an advocate of environmentalism and conservation. His hypothesis provides a basis for the relationship of people to the natural world especially since for 99% of human history they were immersed in this world. Wilson (1993, 31-32) describes biophilia as

> the innately emotional affiliation of human beings to other living organisms… with multiple strands of emotional responses [towards other organisms] woven into symbols composing a large part of culture… Biophilia is relevant to our thinking about nature, landscape… [and invites us] to take a new look at environmental ethics… [by compelling] us to look to the very roots of motivation and understand why, in what circumstances, and on which occasions, we cherish and protect life.

I present biophilia as another example of an ecological impulse that inspires humans to extend the boundaries of their relationships with the garden of Earth by looking beyond that which is merely human and benefits humans, to that which is more than human and benefits all organisms. I perceive it as a way of thinking and acting to look beyond the mere survival of the human species to incorporate the survival of all species. It is a challenge for environmental ethics to focus on the interconnectedness and interdependencies that exist between all biota on the Earth, and to regard these connections as fundamental to all life. Biophilia is a challenge to a conscious appraisal and awareness of these connections, so as to affect current thinking and behaviour of humans towards the more than human world.

Wilson (1993, 34) argues that 'there would seem to be enough evolutionary and physical evidence to test if not justify this innate affiliation of human beings to other organisms'. He also argues that the evidence for this innate affiliation is found in natural history and archaeology in which it is posited that humans evolved out of landscapes of the natural world and engagement with that natural world. That engagement was expressed through hunting and food gathering, ceremonies, myths, stories, paintings and religion. Australian indigenous dreamtime and Amer-Indian spirituality[10] may be seen as examples of this grounding and connection with the more than human world.

[10] Australian dreamtime and legends are replete with stories connecting aborigines to the land and creatures. See Clarke, 2003; Cowan, 1994; Gulpilil, 1983; Hume, 2002; Mudrooroo, 1994; Rose, 1957; Worms & Petri, 1998. Similarly for Native American beliefs and spirituality see Berry, 1990; Fox, 1983; Hausman, 1987; Lake-Thom, 1997; Sproul, 1979; Steinmetz, 1984and Tooker, 1979.

Leopold, Lovelock and Wilson are three ethically-oriented thinkers about the ecological impulse whose work suggests the need for stewardship as a framework for thinking in action. The ecological impulse is one that not only highlights people's response to the ecological crisis (Hay, 2002); it speaks of and draws humankind into relationship with the land (Leopold, 1949/1989), with the earth as a living organism connecting all systems (Lovelock, 1987), and with biophilia (Wilson, 1993) as an expression of the timeless connection of humans to all organisms. This relationship entails love, care, and responsibility and commitment to this planet we call home: the garden of Earth through and in which we wander (wonder at) each day of our lives.

FROM ECOLOGICAL IMPULSE TO STEWARDSHIP

This thesis is concerned with the possibilities of a stewardship ethic providing insight and practical ways forward in an age of ecological crisis. I regard stewardship as an ethical expression of the ecological impulse, an impulse explained above through the ideas of Leopold's land community, Gaian holism and biophilia.

Stewardship is an influential Western idea. Etymologically, stewardship comes from the old English *stig-weard* (OED), meaning someone charged with the responsibility of managing another's property (Moore, 2004). Worrell & Appleby (2000, 266) state that the central idea of stewardship means 'looking after something "in trust" for someone else'. However, beyond these basic meanings, there are numerous other understandings and traditions of stewardship.

In Western history, the predominant traditions of stewardship are Christian. Within these traditions there are several quite different understandings of stewardship. One of the most enduring and common accounts of stewardship occurs in Christian

institutions through traditions of giving as it became systematised through the tithe. Tithing, or contributions to the financial well being of a church have often been seen as an expression of discipleship, responsibility for and commitment of believers to their church. This particular tradition has also been a means of promulgating the evangelizing mission[11] of particular Christian churches. Other understandings of stewardship traditions are more in keeping with the idea that stewardship is a relationship between humans and creation. Bohl (1997, np) states that 'a mark of Christian stewardship is a call to a life of simplicity, generosity, honesty, hospitality, compassion, receptivity, and concern for the earth and God's creatures'.

For the purposes of this thesis, Christian interpretations of stewardship that emphasise relationship with and human responsibility to the Earth are most relevant. McDonagh (1986, 122) states that 'stewardship pictures humans in harmony with nature, standing before God, and ultimately responsible to God for their management of their affairs and the rest of creation'. These understanding of stewardship are drawn from Genesis 2:15[12] where 'Yahweh took the man and settled him in the Garden of Eden, *to cultivate it and take care of it*'. The Christian tradition of

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[11] A survey of both religious literature and online web resources reveals numerous references to stewardship as a form of discipleship, practised by tithing. Some examples include: Hope Associates, 2005; Lewallen, 2006; SLI, 2006; UCC, 2007.

[12] On biblical sources of stewardship see Attfield, 1983; Berry, W 1981; Callicott, 1999; Cloke & Jones, 2003; Glacken, 1967; McDonagh, 1986; Passmore, 1974; Saltmann & Feroussier, 2000; Worrell & Appleby, 2000. The biblical elements and understandings of stewardship as they have filtered down through the ages and influenced contemporary thinking may be explored in greater depth by consulting biblical exegetical sources. See The Jerusalem Bible (Jones, 1968), and biblical scholars Anderson, 1984; Gowan, 1988; Hiebert, 1996, 2000; Von Rad, 1984; Westermann, 1981.

stewardship describes a relational way of being between humans and creation: humans in harmony with nature. In this relational ontology, creation and all its elements are regarded as moral subjects. Scripture scholar Bernard Anderson (1984, 54) referring to Genesis 9:12, states that stewardship is a covenant (relationship), 'focused on the inclusive community of the living'. The community he refers to is creation, including the human steward who has a responsibility to look after and care for this creation, which has been given as gift. Responsibility for creation is fundamental to the Christian understanding of stewardship. Gowan states that 'man [sic] is not just put in the garden to live and do nothing: he is given work to do, to till it and keep it; keeping of the garden means to watch over it, and to nurture it (1988, 40).

Dewitt (2000) extends the understanding of stewardship to include a sense of service and through that service, reciprocity of giving and receiving. He draws on biblical and Christian traditions of servant hood, traditions that focus on devotion and commitment to one another (as opposed to exploitation and the sense of servility). It is a responsibility of humans to serve in the garden. He uses the term 'con-server' or 'keeper' of creation to indicate reciprocity of service, 'service with' and 'for' creation. The 'con-server' or 'keeper' is thus 'a creature in relationship with other creatures and in relationship to creation' (p.304). This notion of being a keeper underscores the virtue of humility as a way of being in the garden by acknowledging the 'awesome' responsibility of looking after creation. Saltman and Ferrousier (2000, 373) state that 'the steward is a selfless servant', a tenant on the land whose responsibility is to care for it. The core elements of the Christian understanding of stewardship include relationship with creation, responsible and selfless caring, experiencing a sense of reciprocity with creation, and being accountable to God.

In recent times, stewardship has gained a more secular and ecological focus. Saltmann and Feroussier (2000, 734) acknowledge that the secular or 'ecological concept of stewardship, especially in North America and Europe evolved out of its religious roots'. Wunderlich (2004, 79) connects it with environmentalism stating that as a result of 'an array of influences, in the last three decades [stewardship] has become an expression of environmental concern and responsibility'. Many environmentalists, (Attfield, 1983; Berry, 1990; Knuth & Siemer, 2004; Passmore, 1974; Rasmussen, 2000; Ruether, 1992; Saltmann & Ferrousier, 2000; Suzuki, 1998; Wilkinson, 1991), have sought to reinterpret Christian traditions in an age of ecological crisis. Their work focuses on the ethical nature of the relationships between people and the Earth. In particular their work emphasises the need to respect the Earth and natural systems as well as focusing on concepts of intergenerational responsibility and equity. In so doing many have recognised that a wide diversity of cultural traditions, especially indigenous and pagan ones have given expression to stewardship[13] as a relational ethic. Within these cultures the Earth is the moral subject with whom humans relate.

In simple terms a secular and ecological interpretation of stewardship emphasises that humanity is charged with responsibility for the earth because of its inherent value as home to all life, evidenced in its history of unfolding. Zimmerman (1994) citing Wilber states that 'the other[14] is sewn through the fabric of all that is'. In this

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[13] On indigenous sources of stewardship and spirituality see Abram, 1996; Bear *et al*, 1991; Bristow, 1995; Diamond, 1993; Dubos, 1980; Harvey, 2005; Hausman, 1987; Knudston & Suzuki, 1992; McDonagh, 1986; Steinmetz, 1984and Versluis, 1992.

[14] Scholars in referring to the 'other' for which we care, use a never ending list of terms to describe the Earth. These terms include 'the land' and the biotic community (Leopold, 1949/1989); creation

secular understanding the Earth is both the moral subject for whom humanity must care and also the source of this moral responsibility. These understandings imbue stewardship with ethical dimensions: a relationship with the Earth, based on responsibility, reciprocity and trust. Wunderlich (2004, 266) summarises this ethical dimension of stewardship: '[it] is ultimately regarded as a person to person, or entity to entity, relationship of responsibility'. Responsibility invokes ethically motivated behaviours, showing concern and care[15] for the more than human. It implies a moral obligation (Knuth & Siemer 2004; Skolimowski, 1993; Worrell & Appleby, 2000) to treat the Earth with the greatest respect and reverence, to express a sense of duty of care for it. Skolimowski (1993, 99) concludes that 'you are responsible for the world because you care, deeming the universe to be sacred'. Care emerges as a fundamental expression of responsibility and ethical behaviours towards the Earth. Care is a sacred trust that evokes the spiritual nature of this relationship.

Underpinning this responsibility towards the creatures and other organisms of the Earth is the contentious issue of the intrinsic rights of other people (non-citizens, those not like us) or of other species (Callicott 1999; Hay 2002; Knuth & Siemer 2004; Maguire, 2000; Nash 2000; Vickerman, 1999; Worrell & Appleby 2000)[16].

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and the natural world (Berry, 1981, 1987); the Earth (Berry, 1989; Ruether, 1992; Skolimowski, 1993; Suzuki, 1997); plants, animals ecosystems (Worrell & Appleby, 2000); nature (Wunderlich, 2000), and aquatic systems (Knuth & Seimer, 2004).

[15] Specifically care is understood as a 'non-instrumental relationship to the other', reflecting the discussion above relating to property and creation. For a fuller treatment of 'non-instrumental relationships' with the Earth, see Plumwood's 'Feminism and the Mastery of Nature' (1993, 142).

[16] It is not the intention of this project to debate the issue of the intrinsic rights of other species. However, Callicott, 1997; Devall & Sessions, 1985; Fox, 1996 and Naess, 1989, provide further

The notion of intrinsic rights underscores the ‘renewed way people are starting to value other species, and their right to an evolutionary journey along with humans’ (Gurr, 2005).

In this thesis I contribute to this secular environmental reinterpretation of Christian stewardship ethics. I continue to use Christian sources throughout this thesis a way of acknowledging the wisdom and insights of Christianity that have contributed to an understanding of the relationship between the human and the more than human world. I too recognise the importance of indigenous worldviews and animist traditions. The thesis works from the premise that the many ancient traditions of stewardship provide important resources for a secular response to contemporary environmental crises. A stewardship ethic developed from these traditions and practiced in the local garden, emerges as a potential expression of a wider ecological impulse.

The foundational qualities extracted from this description of stewardship, include a deep relationship with the Earth marked by a moral responsibility to care for it. At the local level, the particularity of the suburban garden provides the immediate space where stewardship may be lived out as an intimate, ethical response to the more than human world. The gardener who is the steward charged with ‘keeping’ creation, enters into a relationship with the garden, regarding it as a moral subject. This relationship is a way of being embodied in the Earth: the Earth for whom stewards

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debate on the contentious nature of this issue.Of particular interest is Stone’s (1974) book on ‘Should Trees have Standing’ where he advocates giving rights to natural objects and the environment. He also addresses the legal ramifications of the issue of rights of other species: in this instance trees.

and gardeners care and to whom they are responsible. Stewardship is the praxis for achieving and continuing a relationship with the garden.

Although there are a number of contemporary definitions of stewardship with an emphasis on caring for the environment, I have not been able to discover definitions or descriptions of stewardship as it specifically relates to gardening. A definition of stewardship that best approximates the direction taken in this thesis is found in Dixon *et al* (1995, 42-43).

> [t]he moral obligation to care for the environment and the actions undertaken to provide that care. Stewardship implies the existence of an ethic of personal responsibility, an ethic of behaviour based on reverence for the earth and a sense of obligation for future generations. To affectively care for the environment individuals must use resources wisely and efficiently, in part by placing self-imposed limits on personal consumption and altering personal expectations, habits and values. Appropriate use of natural resources within the stewardship ethic involves taking actions that respect the integrity of natural systems.

This definition expresses the foundational qualities of stewardship as I have described them, and includes some of the extended qualities that I wish to present in the next section. It also recognises and includes the ethical implications of stewardship as a relational way of being and behaving in the world. In this way ‘humanity's role is to be earth's gardener and curator, with the responsibility for looking after those who share this garden-planet with us’ (Smith, 1994, np).

EXTENDED QUALITIES OF STEWARDSHIP

Noting the Christian antecedents and contemporary descriptions of stewardship discussed above, I would like to build a more comprehensive, robust and thought-provoking account of stewardship by utilising the findings of ecological science (Attfield, 1983) and combining these with a number of philosophical insights that fit into several categories. My expanded understanding of stewardship incorporates 'mindfulness' (distilled from the writings of a Buddhist monk, Thich Nhat Hanh), the notion of 'immersion' into the natural world through the senses (e.g. Abram, 1996; Weston, 1994), Skolimowski's 'reverence of the Earth', general principles of and personal reflections on 'love and compassion', and 'celebration' as espoused by the mystics of the Middle Ages.

Understood as an 'act of wakefulness' (Meister Eckhart, in Fox, 1980, 129), spirituality is integral to cultural traditions of stewardship. This wakefulness is an awareness of the world as a gift to be cherished and, eventually to be passed on to others. A spiritual dimension to stewardship is integral to and arises from some of these extended qualities. Sherrard (1987, 88) observes that 'humanity has a spiritual relationship to the world, it is part of our roots of who we are, and our destruction of the natural world represents a spiritual blindness'. Wakefulness as spirituality is a portal to the deeper understanding of human existence and the relationship between humans and the more than human with whom they share the Earth. Spretnak (1986, 41) captures this wakefulness as 'a focusing of human awareness on the subtle aspects of existence, a practice that reveals a profound interconnectedness'. I understand spirituality as a practical meditation, an awareness of the mundane and ordinary which take on sacred and extraordinary characteristics. Spirituality is being

consumed with childlike wonder at the intricacies of the more than human world. It is an act of the mind as a conscious focusing of the senses to experience the continual unfolding of life. It is an awareness of a bond with the Earth, within which humans have their roots, roots they shared with other organisms. That bond manifests itself at the deepest level of our interactions and connections with the more than human world. Spirituality is an awareness of the Earth as gift. It is an intense experience of immersion in the phenomenon of life, from which flows intense gratitude at being alive. It is being moved by the incredible mystery and beauty that the garden of Earth is. Spirituality is being awake to the Earth as blessing (Westermann, 1978). 'Just to be is a blessing; just to live is holy' (Heschel 1987, p. 84). To live in a garden is a blessing: it is being awake to the wonder and mystery of life that unfolds with every shovel of soil upturned, every flower that blossoms.

Mindfulness

Mindfulness is a practice of awareness to life fundamental to many Eastern and Western religions. I chose the Buddhist tradition to present mindfulness as an extended quality of stewardship for I perceive it as a deliberate 'act of wakefuleness' (Meister Eckhart, in Fox, 1980, 129) that focuses on everyday tasks. Mindfulness as a deliberate act of wakefulness has strong practical applications which can be incorporated into engagements with the garden. Thich Nhat Hanh (1993a, 11) states that 'mindfulness is keeping one's consciousness alive to the present reality and moment… as both a means and an end [and that] mindfulness is the seed of enlightenment, awareness, understanding, care, compassion, liberation, transformation and healing' (Nhat Hanh, 1992, 29). Consciousness of the present reality refers to performing every task while being focused on the *doing* of that task within a particular moment. It is a process of active meditation, of alertness, of being

attentive to every detail of what we do (Nhat Hanh, 1993b). Mindfulness incorporates a heightened use of the senses. In all activities 'mindfulness assumes a deep attitude of caring' (1993a, 15). Whatever the task being done, from ordinary washing of hands to gardening in order to garden it is all a matter of 'contemplation on the interdependence of all things, and an entry point into the universal harmony of life' (1993b, 55).

Crucial to the practice of mindfulness is this specific awareness of the present moment, rather than a focus on linear dimensions of time. Mindfulness challenges the tension between *the now and the not yet*. Within the garden, being focused on pulling out weeds, or turning over soil or any other specific practices is an activity of the present moment. It is focusing on that one particular task, at that one particular moment. Daily observation of minute changes, of growth and death of plants, of moods in the garden is a moment of practising mindfulness, as a tool of stewardship. The present moment challenges being attached to the future: it also takes away from the delusion of controlling what will or will not happen tomorrow. In the long run the 'contingencies of nature' (Pollan, 2002, 204), will always affect what happens in the garden and mindfulness of these contingencies cause the gardener to focus on the present moment. Broadening of the horizons of time and a practical understanding of it, point to the present moment as being fundamental to understanding the garden as part of an ongoing, dynamic, unfolding and creative enterprise of the Earth. Stewardship requires an engagement with the garden that is focused on the now.

Immersion

Mindfulness involves using the senses to their fullest capacity – being immersed. Abram (1996, 59) uses the term 'synæsthesia' to describe 'perception as an activity

fusing all the body's senses as they function and flourish together'. Weston (1994, 85, 89-91) argues that the separation from the more than human world is due to the assault on our senses, by such things as noise, light and speed, illustrated by 'the relentless geometries of our cities, and the flickering imagery of our televisions'. The disconnection is a displacement, and not utilising the full potential, of our senses. To restore what Gore (1992, 222) laments as our 'lost sense of the vividness, vibrancy, and aliveness of the rest of the natural world and the richness, and immediacy of life itself', Weston (1994) suggests that we remake contact with the world, by immersing ourselves in it, and being in communion with it; he writes of a sensory immersion, of paying attention, of 'coming back to our senses' (p.143) and living in the presence of the more-than-human world. To be a part of the Earth means to be sensually immersed in it recognising that the world is not out there but around us: 'we live *in* the planet, not *on* it' (Weston, 1994, 82). In similar vein Abram (1996, 62) suggests that 'the recuperation of the sensuous is the rediscovery of the earth': it is the sensual nature of our body's interaction – immersion – with the more-than-human world. Gardening involves immersion and grounding. Weston (1994, 124, 143) sees gardening as a means of attuning the senses to the more than human: 'being buried in dirt and horse manure, I recognise a richer truth. I am part of the earth, and in the garden I belong to the multi-species of plants and insects and animals… I am "back to earth"' he concludes. Masumoto (1999, 192) catches the sense of being embodied in the garden and relearning to take time to enjoy it: 'Nothing replaces the personal and intimate sensibility of walking the farm, feeling the Earth, seeing and smelling the orchard… its getting harder to walk… walking takes precious time… we have to break old habits and relearn to walk'. Immersion is a practice involving the heightened use of the senses to experience, to take time and to reconnect with the

more than human world that is the garden (of Earth). The gardener attuned to the garden walks through it slowly and measurably, observing, sensing intricacies, smelling the soil, tasting the fruit of labours, feeling the brush of leaf on face, and by doing so restoring a sense of connection with the Earth. The garden becomes the grounding experience of people, where they become embodied, physically and sensually into the Earth.

Reverence

Implicit in the ethical responses to the ecological impulse are values –ecological values that determine the relational ontology of stewardship. In embellishing stewardship I draw on the ecological values presented by Skolimowski (1993), in particular the value of reverence for the Earth – one which I perceive to imbue ecology with a spiritual dimension. Reverence for the Earth is not a new concept: it is both a value and a practice, one that implies a deep sense of care. Biblical injunctions had strong overtones of reverence. Thomas Berry (1990, 134) states that 'reverence will be total or it will not be at all'. Skolimowski (1993, 6, 20, 35) argues that:

> to act in the world as if it were a sanctuary is to make it reverential and sacred… ecological consciousness is the foundation of ecological spirituality… it carries with it a set of ecological values, the primary one being reverence from which follow, responsibility, frugality, diversity and justice…

These values contribute to an understanding of the spiritual dimension of life and the Earth, of the 'reverential attitude towards the entire planet as a "sacred enclosure", a *Temenos*' (p.43). Roberts and Amidon (1991, 37), refer to the Earth as a world 'alive

with spirit and richly sacralised'. From a practical perspective, frugality, as an extension of reverence is one particular value that has far reaching consequences for it is a direct challenge to 'living simply, and being judicious and discriminatory in the use of resources [of the earth]' (p.36). Hay's (2002) echoes Skolimowski, when he refers to the universality of frugality as an act of reverence. The practice of reverence is an act of mindfulness; it is also a sensory immersion into the garden and earth. Gardening is a reverential act of awareness, of recognising and attributing value to the space of the garden. It is an act of gratitude and humility at being able to partake in the co-creative activity of the Earth, and to acknowledge in the earth a common ancestry of life and connections. Reverence is respecting and honouring other organisms and ecosystemic processes living in and occurring within garden. It is 'being in love' with the garden consciously and willingly, and affirming the relationship between gardener and garden.

Love and compassion

Love and compassion may be described as virtues which give body to spirituality and meaning to life. Neither is a maudlin sentiment or pure feeling as 'each involves willed, conscious engagements with the "other", reflecting care, respect and responsibility' (Silvester, 1986, pers. comm.). As willed engagements they may be perceived as further practical applications of mindfulness and immersion, and respect and reverence for the earth.

The virtue of love is a fundamental aspect of human existence. Fromm (1963, 6) asserts that 'love is the answer to the problem of human existence'. Maslow (1970, 181) describes the importance of love in people's lives as one of the social belonging needs, fundamental to self-actualisation in that 'we must understand love; we must

be able to teach it, create it, predict it, or else the world is lost to hostility'. Christianity espouses love as the fundamental basis of its theology and belief system. Fromm (1963, 17) also notes that the experience of separateness arouses anxiety, and that 'love makes man overcome his sense of isolation and separateness'. He acknowledged that 'the human race is separating itself from the natural world, and therefore the more intense becomes that need to find new ways of escaping separateness' (p.9). Separateness and dislocation from the natural world are two common themes which underlie the ecological crisis (Weston, 1994; Caldicott, 1992; Merchant, 1990). Translating the anthropological ministration of love into love of the Earth may be 'the live energy behind ecological commitment' (Lee, 2000, 351).

Particular scholars write about love of the natural world. Suzuki (1999), for example, spells out the law of love to encompass those that extend beyond our own species. Wilson's Biophilia is 'a kind of love' (Orr, 1993, 426) that needs to be more than *eros* or *philia*[17]. According to Bratton (1992, 15), it has to be *agape*[18]: a love 'that tempers our use of nature so that God's providence is respectfully received and insatiable desire doesn't attempt to extract more from creation than it can sustain'. Is this love also not reflected in the 'frugality' of Skolimowski? I would argue that love of the Earth, as a relational ontology is a combination of both *eros*, as a sensual

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[17] *Eros* most often refers to love of a sexual nature, a love that exists between two people who have 'fallen in love' (Lewis, 1983). Fox (1983, 1991), however, presents *eros* as a sensuous engagement with the Earth, an engagement written about and practised by the middle ages mystics. *Philia*, refers more so to a love that exists between members of a family, a 'fellowship' type love.

[18] *Agape*, a term much used by the early Christians, normally refers to unconditional love, however it is also a love of engagement with and being part of community, as in the Christian Eucharist: a love meal of the community. It has strong inferences of sharing (life and living) within the community

immersion in the more than human world and *agape,* as a practical recognition of the communion between all living things and treating all the members of the Earth community with deep respect and reverence. Other scholars also reflect on love of the more than human. Leopold (1949/1989, 223) is adamant 'that an ethical relation to the land cannot exist without love, respect, and admiration for land'. Caldicott (1992, 193) reinforces the practice of love: 'only if we love nature, learn about its ills, and live accordingly will we be inspired to participate in activities to save the planet'. In like manner, Knitter (2000, 370) proposes that 'the beings of the earth – animate and inanimate, sentient and non-sentient – cannot be only objects that we use; they must be persons or beings we love'. I interpret Knitter's observation as reiterating the notion of the Earth and the more than human as a moral subject. This person to person relationship encompasses ecological values of states that the love of nature 'beneficence, esteem, receptivity, humility, and communion (Lee citing Nash, 2000, 351).

Compassion like love also reflects a way of being and relating to the Earth. Conlon (1994, 51) eloquently speaks of 'compassion being woven into the fabric of life… a relationship and experience of communion… it is who we are and what the earth does'. The mystics of the middle ages (cf. Meister Eckhart, Hildergard of Bingen, Mechtild of Magdeburg and Julian of Norwich), underscore the sense of compassion for creation. Drawing on insights from their work, Merton (1967, 80) observes that 'compassion is based on a keen awareness of the interdependence of all living beings'. Commenting on Meister Eckhart, Mathew Fox (1980, 279) also acknowledges that 'practising compassion requires equality… to enter into a consciousness of interdependence… compassion is the moral law of interconnectivity'. Macy (1991, 187) states that 'compassion is a sign of our

evolution; a sign that enables recognition of the interconnectedness with all beings', and in similar vein the Dalai Lama (2001, 43) reflects that 'compassion is responsibility, an activity of the mind allowing for communication with (humans), animals and insects'. I interpret the Dalai Lama's reflection as an expression of the ecological impulse: a yearning to love and act compassionately towards the more than human world. Fox (1990), comments on our engagement with the Earth and experiences of earthiness as forms of compassion. He also relates compassion to gardening: 'gardening is a way of life and wisdom… respect, waiting, patience and doing are part of gardening… it is a relationship of mutuality and interdependence, lacking in manipulation or control (1990, 171). Compassionate involvement in the garden is an act of love and reverence, mindfulness and immersion as acts of touching the Earth. The garden as a microcosm of the Earth, is 'constantly creating compassion… flowers are blooming, photosynthesis occurring' (Conlon, 1994, 51), and the gardener involved in creating the garden is practising compassion. Cultivating soil, pruning fruit trees and roses, tending to the health and vitality of plants, are practices that point to a mindful expression of compassion.

Celebration

Celebration is a joyful, mindful activity; it is revering and dancing in the garden; it is being engrossed in the wonder of the more than human world; it is being grounded sensually in the soil and all the intricacies of the garden; it is an expression of love and compassion for all life and the interconnectedness of that life. It is 'to celebrate the wonder of the whole cosmic process… and be involved in a process of celebrative consciousness requiring a spirituality and ethic of mutual limitation and reciprocal life-giving nurture' (Ruether, 2000, 104). Celebration appears in

opposition to separation from, manipulation and domination of the more than human world.

Throughout human history, celebrations such as dancing, singing, stories and mythology, initiation rites or nature festivals have been multi-dimensional activities praising the relationship of people to the Earth (Abram, 1996; Bear *et al*, 1991; Knudtson & Suzuki, 1992; McCarthy, 1991). These celebrations were blessings; rituals giving thanks to the Earth and its gifts. These gifts included life, greenness, fecundity, fruitfulness and beneficence. The celebrations also underscored reciprocity: in caring for the more than human world, humans were the beneficiaries of these gifts. In presenting celebration as an extended quality of stewardship I would like to focus on the mystics of the Middle Ages. It is they with whom I have familiarity though past training and interests and who have captivated my understanding of celebrating the Earth. It is they who manifested a spiritual and earthy connection with creation, with the more than human world. Their heterogeneous celebrations of the relationship between the human and creation were lucidly expressed in their life, poetry, reflections and meditations. Theirs was an ecstatic union with all facets of creation. They recognised the blessing and the gift that the Earth and all creation represented. I perceive their sense of communion with and celebration of the Earth, as an example of celebrating the garden.

Among the mystics, Hildegard of Bingen (1098-1179) seems to be pre-eminent. Hay (2002, 111) states that ‘she is held to stand at the head of a tradition that joyously celebrates creation itself’. Her writings indicate an intimacy with the earth as a ‘region of delights’ (Uhlein, 1983, 14) reflecting *eros*, that sensual engagement with the Earth. Hildegard regards the Earth as a gift to be treasured and enjoyed. Creation is profound and deeply blessed, infused with love: ‘I compare the great love of

creator and creation to the same love and fidelity which binds man and woman… embraced by the creator's kiss' (Uhlein, 1983, 8, 57). Hildegard's *viriditas* was the basis of this expression of joy and celebration of creation. *Viriditas* espoused grounding in earth and earthiness, and 'though it was grounded in God, its significance was moral and spiritual' (Sweet, 2006, 135). It is 'vitality or vigour… a life-giving force of nature and a generative energy, a growing and greening power, verdure and fertility' (Sweet citing Schipperges & Berger, 2006, 135). Sweet goes on to argue that greenness was crucial to the meaning of *veriditas*, because greenness meant life, and the vital power of nature, as a vegetative and animal life force. 'The earth is at the same time mother… of all that is natural and human… the earth of humankind contains all moistness, all verdancy, all germinating power… it is this vigour that hugs the world, warming moistening, firming, greening' (Uhlein, 1983, 58-9).

Viriditas was the basis for a sense of cosmic interdependence: 'The air blowing everywhere serves all creatures' (Uhlein, 1983, 41). Hildegard believed that nature "herself" was the source of wisdom and that 'the soul full of wisdom is like a bubbling brook… [that] with nature's help humankind can set into creation all that is necessary and life sustaining (Uhlein, 1983, 62, 106). But within the context of celebration Hildegard also issues a cautionary note about our place in the creative circle: 'humanity finds itself in the midst of the world… dependent upon others …we are to work with nature for without it we cannot survive' (Uhlein, 1983, 71, 87). This cautionary note takes up the theme of love as *agape,* a moderating engagement with creation, a frugality and humility, as much as communion with the Earth. I also interpret this cautionary note as suggesting that humans have a moral responsibility

to care for the Earth – a moral responsibility that resonates with stewardship as an ethical practice and way of being in the world.

Other mystics take up similar elements of celebration. Meister Eckhart takes up the themes of earthiness when he writes about compassion, humility and 'the entry into creation in search of its honey sweetness' (Fox, M., 1980, 153). Mechtild of Magdeburg praises all creatures: 'The manifold delight I learn in earthly things can never drive me from my love… in the nobility of creatures and their beauty I will love God' (in Woodruff, 1985, 40). She adds that 'the truly wise person kneels at the feet of all creatures and is not afraid to endure the mockery of others' (p.39). Compassion and love overflow in their praise of creation. Insofar as 'we love compassion and practice it steadfastly to that extent we resemble the creator' (Mechtild in Woodruff, 1985, 119). Julian of Norwich expresses delight in the goodness and sensuality of creation: 'I know that heaven and earth and all creation are great, generous and beautiful and good… God's goodness fills all creatures and endlessly flows into them' (in Doyle, 1986, 11). Hildegard (in Fox, 1985) speaks of living in a garden of delights: '[Paradise] is a place of pleasantness which blooms in the greenness of flowers and herbs, and flooded with the pleasures of all aromas'. Mechtild also speaks about what it means to be a gardener:

> 'there is a treasure in the earth: be a gardener. Dig and ditch, toil and sweat, turn the earth upside down, seek the deepness and water the plants. Continue this labour and make sweet floods to run and noble and abundant fruits to spring' (in Doyle, 1986, 84).

It is to the garden that my attention now turns. The combination of the foundational elements of stewardship and my development of the extended

qualities just outlined, are used as an analytic framework by which I interpret the qualitative findings of my research partners. These findings point to the sense of stewardship that is manifested in the attitudes and practices of gardeners.

3 GARDENS AND GARDENERS

INTRODUCTION

This chapter reports on findings stemming from my use of quantitative methods to conduct an audit of plant species in suburban gardens. These findings are foundational to an examination of the qualitative dimensions of gardening practices and their connection to stewardship presented in later chapters. The quantitative focus here is on species composition and richness within gardens, which I interpret as indicative of the garden as representing the greater garden of the Earth. The metaphor of Earth as a garden was explored in detail at the beginning of chapter two. The suburban garden is a microcosm of the Earth. This microcosm is rich in plant species, it is diverse; there are ecosystems and ecosystem processes within it which mirror those in the greater garden of the Earth. The garden is a part of the whole and reflects and embodies all that is the whole: its complexity, and spatial relations. The garden is dynamic and multifaceted in its structure and processes as is the greater garden of the Earth.

The emergent typology – based on the range of species growing in the gardens – examines species composition and richness, the prevalence of *life form*[19] and the geographical origin of species as they relate to garden type. A description of

[19] Life form refers to the morphological (external characteristics) structure or shape of the plant body. E.g. trees, shrubs, ferns and annual flowers.

gardener identities is also presented in order to provide insights into reasons and motivations for choice of species, species composition and richness of gardens, structure of gardens, as well as a basis for understanding their gardening attitudes and practices.

Before describing the methods used to measure species composition and richness, and in order to contextualise this discussion of typologies, it is useful to note that gardens may be regarded as conscious and/or unconscious forms of self-expression, influenced by as many factors as there are gardeners (Hobhouse, 2002; Hoyles, 1991; Pollan, 2002; Timms, 2006). Each garden is distinctive and different in meaning, a social and (sometimes) political statement; they are ecologically different from one another; at times they are also spiritual expressions of how gardeners view and feel about their relationship to their gardens and the garden of the Earth. In short, gardens are representations of individual and cultural values and attitudes formed and expressed through a multitude of practices, including the choice of plant species.

Numerous styles of gardens exist in the suburbs. Some have historical precedents. Others have more recent origins. Some may be the outcome of current design fashions or practices, others determined by environmental considerations. Yet others may reflect a status quo imposed by planners and developers. Common styles and types include the cottage garden, the potager garden, the Mediterranean garden, the native garden, the formal garden, the tropical garden, the contemporary or minimalist garden, and the rock or pebble garden. Representations and descriptions of these garden types, and criteria for determining their different styles, have varied from author to author, and from gardener to gardener. These gardens are as much ecologically different to one another as they are culturally different. These ecological and cultural differences stress the recent parallel areas of garden research. As little as

four years ago there appeared to be little empirical/scientific research on garden typologies, even less on garden species composition. There are signs that this is beginning to change, with the recent publication of a number of scientific papers that specifically focus on garden ecology. A sequence of papers in the last few years has had a specific focus on garden species composition, spread across a number of contexts (Gaston *et al*, 2005; Smith *et al*, 2005, 2006; and Thompson *et al*, 2003). These papers however did not include a typology of gardens.

As well as these scientific papers, publications on the social and cultural characteristics of gardens have also become more numerous in recent years. Bhatti and Church (2000, 2001, 2004), conducting qualitative research on leisure as a reason for, and an outcome of gardening, mention classifications of gardeners. Basing their research on data from Mintel (1999) and the BBC (1999), they make passing reference to garden types, but these garden types are not based on species composition. Their descriptions of gardens as 'outdoor rooms, low maintenance gardens and "minimum" gardens' (2000, p. 188), hint at a cultural perspective on garden types.

In two qualitative research papers, Head & Muir (2004), and Head *et al* (2004) make reference to native gardens and vegetable gardens. The reference to these two types of gardens arises from a cultural investigation of nativeness in Australian gardens, and of the influence of migrants upon Australian backyards, particularly in growing vegetables. Askew and McGuirk (2004, 27) developed a typology of gardens related to the amount of water used in 'Cottage, Native, Modern, Manicured and Other' gardens. However, the criteria used to determine these types of gardens were cultural rather than ecological.

Three Australian publications focus on garden typologies based specifically on species composition of gardens. Zagorski, *et al* (2004) identified four initial garden types: the shrub garden (an eclectic mix of exotic and native shrubs); the native garden (local native trees and shrubs); the woodland garden (a species rich garden with native and exotic shrubs and trees, herbaceous perennials, ground covers: an antipodean adaptation of the Jekyll [cf. Bisgrove, 2006 and Lewis, 2007] style), and the gardenesque (a type more described by the layout of the beds and plants, but including also an eclectic mix of exotic species). A more recent comprehensive classification of Hobart gardens reported in two papers identifies 12 garden types based on the floristics of 107 front and back gardens (Daniels and Kirkpatrick, 2006; Kirkpatrick *et al* 2007). The collective significance of these works is threefold: they bridge a gap in the literature on gardens; bring out what appears to be an increasing commitment to conserving or enhancing biodiversity in suburban gardens; and begin to forge methodological links between science of environment and the environmental humanities (Head *et al.*, 2005), such links evident throughout this work, too.

METHODS

A total of 134 gardens were surveyed from twelve suburbs around Hobart. The type of original vegetation (pre-existing vegetation prior to subdivision and modification by people) was classified as one of coastal, heathy woodland/forest, grassy woodland/forest, dry sclerophyll woodland/forest and wet sclerophyll forest. Slope, block size and annual rainfall were also recorded. The age of garden, age, gender and level of gardening activity of the gardener were also noted. Sampling took place over a period of 12 months (December 2003 to December 2004), as described in chapter one. A list was made of all the observable vascular plants in each garden, with the

exception of turf grasses, lawn weeds and herbaceous weeds. A spreadsheet listed species as present or absent in any given garden. A total of 2340 different taxa (Appendix 3) were identified in the sample of 134 gardens. Observations were also made of other features that contributed to an overall picture of the gardens. These features included the structure and style of the gardens, soft and hard landscaping features (paths, retaining walls' garden ponds and seats) and the materials used in these, garden sheds or areas for propagation, the presence and absence of lawns[20], and any other features that provided evidence of the gardening practices of gardeners.

The *species presence/absence* data from the 134 gardens were ordinated using non-global non-metric multidimensional scaling (MDS) following the default options in DECODA (Minchin, 2001). These were Czekanowski [Bray-Curtis] distance measure, minimum dimensions = 1, maximum dimensions = 4, maximum iterations = 200, stress ratio stopping value = 0.999, small stress stopping value = 0.01, solution scaling option = 2 0. MDS is particularly suited to data in which most attributes have more absences than presences because the technique is not sensitive to skewness (Minchin, 2001). Species that occurred in only one garden were excluded from the analyses because they can sometimes dominate the outcomes of

[20] Initially I perceived lawns as one of the more common features and part of the overall structure of gardens. However within the context of the interviews, and the exploration of gardening practices, lawns became a common theme for discussion amongst research partners. A number of research partners expressed strong views about lawns and perceived them as wasteful of resources, particularly the amount of water required for their upkeep. Chapters four and five present some of their views on lawns.

the ordinations. The four-axis ordination scores were used as input to an agglomerative classification using Ward's method (averaging distance values rather than individuals) and Euclidean distance. The classification was accepted at the seven-group level on the basis of the rate of decline in similarity values. These seven classificatory groups accepted from the classification (Figure 3.1) were shown to be all significantly different ($p < 0.05$) in their species composition and richness, using ANOSIM in DECODA.

Data on *species richness of garden types by life form and origin of species* were also calculated. One way ANOVA was used to test whether garden types differed in these richness variables. ANOVA was also used to determine whether gardener age and gardener gender were related to garden type.

Life forms of taxa found in the gardens are recorded in Table 3.1. These descriptions of life form are derived from teaching notes during my time as lecturer in horticulture at Murdoch TAFE in Perth Western Australia (see Preface). Table 3.2 explains the *origin classes of species*, indicating the original, native geographical location from where these species came. The *percentage frequency of all taxa occurring in more than 60% of gardens by group* listed in Table 3.3 was constructed to show the characteristic species in each of the classificatory groups. The percentage frequency of all taxa by group appears in Appendix 2.

Species richness for gardens as a whole was also calculated (Table 3.4) and for *life form and origin classes by garden type* (Tables 3.5 and 3.6). Each species was placed in a life form class, and an origin class. Species richness was greatest in the Flower complex, Woodland, and Production flower complex garden types (213, 177 and 159

species respectively); species paucity occurred in the Vegetable, Coastal, and Species poor exotic type gardens (62, 69 and 80 species respectively).

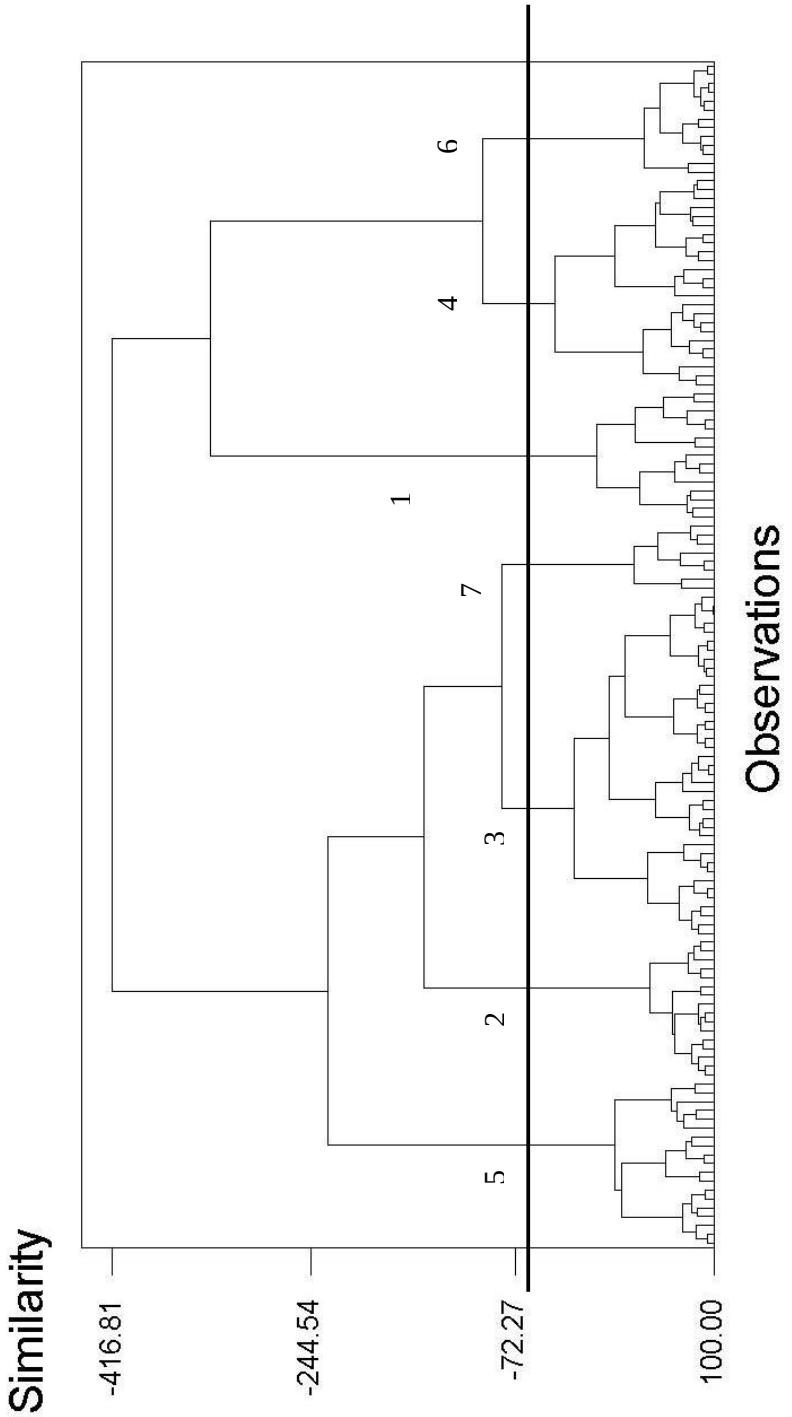

Figure 3.1 Dendrogram showing the seven classificatory groups

Table 3.1 Description of Life forms

Annual: A plant whose life cycle lasts one growing season.
Bulbous perennial: A perennial plant, persisting from year to year, with an underground modified stem that is a bulb. It loses its leaves at the end of its flowering season.
Biennial: A plant whose life cycle lasts two growing seasons with vegetative growth in the first season and flowers and fruit in the second season.
Caulescent: A plant with a bole or trunk, the top of which terminates in a leafy stem, e.g. a palm.
Deciduous Shrub: A multi-branched woody perennial that loses its leaves seasonally, and normally grows to no more than 4-5 m.
Deciduous Tree: A single-trunked, woody perennial which loses its leaves seasonally and normally grows more than 5-6 m.
Evergreen perennial: An evergreen perennial is an herbaceous perennial which stays green and lush all year, and does not die back. It is not woody.
Evergreen Shrub: A multi-branched woody perennial that retains its leaves seasonally, and grows to 4-5 m.
Evergreen Tree: A single-trunked, woody perennial which retains its leaves seasonally that normally grows more than 5-6 m.
Fern: A vascular plant that does not flower or produce seed. It has green fronds that curl upward, and reproduces by spores.
Grass: A plant with narrow, sheathing leaves and parallel veins. Its stems are jointed, pithy or hollow, and the flowers are borne in spikelets.
Herb (culinary): An annual, biennial or perennial lacking a permanent woody stem which is typically grown for its culinary or medicinal usage.
Herbaceous Perennial: A plant with soft and green stems, which dies back at the end of each growing season, to emerge the following season with new stems and leaves.
Succulent: A fleshy, soft plant with modified stems and leaves to retain water, e.g. cacti or aloe.
Vegetable: An herbaceous plant cultivated for its edible roots, stems, leaves, bulbs or tubers.

Table 3.2 Origin class of species (origin classes refer to the country, continent or geographical locations from which a plant originates)

Australia: species native to the continent of Australia, and occurring throughout the mainland and Tasmania
Tasmania: species native to Tasmania only, an island to the south of Australia
Australia/New Zealand: species native to both Australia and New Zealand
New Zealand: species native to New Zealand only
Asia: species originating from the central and eastern part of the continent of Asia including, Siberia, Mongolia, China, the Korean peninsula, Japan, southeast Asia, India and the Himalayas
Central America: Species native to the isthmus connecting North with South America. It includes the countries of Mexico, Guatemala, Nicaragua, El Salvador, Honduras, Costa Rica, and Panama
Europe: species native to continental Europe including the British Isles, Scandinavia, and Eastern Russia
Eurasia: species whose origins span the land mass formed by the continents of Europe and Asia; and normally includes continental Europe and Western and Eastern Asia
Mediterranean: species native to those areas or countries that border onto the Mediterranean Sea
North America: species native to the North American continent
South Africa: species native to the continent of South Africa excluding those areas/countries bordering on the Mediterranean
South America: species native to the South American continent
Cosmopolitan: species which are scattered over all continents of the Earth (excluding Antarctica)
Rare species: in this instance, species which are native to Tasmania and whose existence is declared in legislation as ‘rare or threatened’

Table 3.3 Percentage frequency of species by garden type (species that occur in more than 60 percent of gardens in at least one type are included and highlighted in bold)

	Classificatory group (number of gardens)						
Genus and species	**Coastal**	**Complex flower**	**Production flower complex**	**Native**	**Species poor exotic**	**Woodland**	**Vegetable**
	15	16	39	24	19	13	8
Acacia longifolia ssp. sophorae	**86.67**	6.25	7.69	16.67	5.26	15.38	0.00
Poa labillardierei	**73.33**	12.50	23.08	33.33	5.26	15.38	0.00
Rhagodia candolleana	**60.00**	0.00	7.69	0.00	0.00	0.00	0.00
Gazania hybrida	**60.00**	37.50	46.15	33.33	31.58	15.38	25.00
Azalea indica	**66.67**	**93.75**	**61.54**	37.50	**57.89**	**84.62**	25.00
Hydrangea macrophylla	**66.67**	**87.50**	48.72	20.83	42.11	**61.64**	25.00
Aquilegia vulgaris cvs	**66.67**	**87.50**	**79.49**	8.33	31.58	**69.23**	25.00
Agapanthus praecox ssp. *orientalis*	**66.67**	**81.25**	**71.79**	58.53	57.89	**69.23**	25.00
Lobelia erinus	20.00	**81.25**	51.28	8..33	47.37	30.77	0.00
Tanacetum parthenium	13.33	**81.25**	46.15	8..33	31.58	0.00	12.50
Viola x wittrockiana	33.33	**75.00**	46.15	0.00	21.05	0.00	37.50
Camellia sasanqua	0.00	**75.00**	35.90	8..33	15.79	**61.54**	25.00
Abelia grandiflora	0.00	**68.75**	23.08	45.83	42.11	38.46	0.00
Anenome hupehensis	0.00	**68.75**	12.82	0.00	10.53	23.08	0.00
Cymbidium spp.	6.67	**68.75**	28.21	4.17	5.26	0.00	0.00
Azalae kurume	0.00	**68.75**	43.59	12.50	31.58	53.85	0.00
Cyclamen persicum	0.00	**68.75**	41.03	0.00	5.26	46.15	0.00
Viola odorata	13.33	**68.75**	**61.54**	25.00	42.11	**61.54**	25.00
Alstroemeria peruviana cvs.	13.33	**62.50**	33.33	12.50	36.84	15.38	0.00
Penstemon spp.	0.00	**62.50**	12.82	12.50	15.79	0.00	0.00
Nerine bowdenii	0.00	**62.50**	33.33	4.17	26.32	30.07	0.00
Pittosporum tenuifolium cvs.	20.00	**62.50**	35.90	25.00	36.84	23.08	0.00

Freesia x hybrida	0.00	**62.50**	25.64	0.00	15.79	23.08	12.52
Rosa spp.	33.33	**93.75**	**94.87**	**62.50**	**94.74**	**92.31**	**75.00**
Camellia japonica	13.33	**81.25**	**84.62**	29.17	**63.16**	**84.62**	25.00
Rosmarinus officinalis	33.33	**68.75**	**87.18**	37.50	26.32	**61.54**	25.00
Mentha x piperata	20.00	31.25	**76.92**	25.00	21.05	**69.23**	37.50
Tropaeolum spp.	20.00	31.25	**74.36**	33.33	31.58	46.15	25.00
Petroselinum crispum	53.33	50.00	**74.36**	20.83	31.58	7.69	50.00
Malus domestica	6.67	50.00	**64.10**	41.67	36.84	23.08	37.50
Citrus limon	20.00	43.75	**64.10**	16.67	26.32	23.08	12.50
Lavendula angustifolia	40.00	**62.50**	**64.10**	29.17	36.84	53.85	37.50
Solanum tuberosum	13.33	12.50	**61.54**	25.00	21.05	7.69	50.00
Salvia officinalis	13.33	25.00	**61.54**	12.50	15.79	46.15	37.50
Acacia melonoxylon	6.67	12.50	33.33	**70.83**	15.79	46.15	25.00
Callistemon pallidus	6.67	25.00	30.77	**66.67**	5.26	53.85	0.00
Leptospermum scoparium	20.00	37.50	48.72	**62.50**	10.53	38.46	25.00
Coleonema pulchrum	33.33	56.25	53.85	45.83	**73.68**	46.15	25.00
Lobularia maritima	46.67	**62.50**	43.59	29.17	**68.48**	23.08	12.50
Dicksonia Antarctica	20.00	50.00	**71.79**	**62.50**	**73.68**	**100.00**	12.50
Rhododendron spp.	6.67	**81.25**	58.79	50.00	57.89	**92.31**	25.00
Narsissus cvs.	6.67	**68.75**	**76.92**	29.17	47.37	**84.62**	37.50
Erigeron karvinskianus	26.67	**68.75**	**74.36**	37.50	52.63	**84.62**	0.00
Betula pendula	0.00	50.00	53.85	25.00	31.58	**84.62**	25.00
Argyramthemum frutescens	**73.33**	**62.50**	**69.23**	33.33	**68.42**	**76.92**	12.50
Acer palmatum	0.00	**68.75**	30.77	20.83	15.79	**76.92**	0.00
Cotoneaster spp.	6.67	25.00	46.15	58.33	**63.16**	**76.92**	0.00
Fuchsia x hybrida	20.00	56.25	**74.36**	50.00	42.11	**76.92**	25.00
Lavendula dentata	46.67	43.75	**69.23**	37.50	26.32	**76.92**	12.50
Myosotis sylvatica	20.00	**68.75**	**64.10**	37.50	**63.16**	**76.92**	12.50
Acacia dealbata	6.67	0.00	28.21	58.33	10.53	**76.92**	25.00
Eucalyptus regnans	0.00	0.00	10.26	8.33	0.00	**76.92**	0.00
Helleborus orientalis	13.33	**68.75**	25.64	4.17	21.05	**69.23**	0.00
Dianella tasmanica	53.33	31.25	30.77	54.83	5.26	**69.23**	12.50
Digitalis purpurea	0.00	43.75	30.77	4.17	31.58	**69.23**	0.00
Hedera helix	20.00	56.25	**61.54**	41.67	21.05	**69.23**	12.50
Jasminum polyanthum	13.33	**68.75**	**61.54**	41.67	**63.16**	**69.23**	37.50

Lunaria annua	0.00	50.00	35.90	20.83	26.32	**69.23**	0.00
Olearia argophylla	0.00	0.00	7.69	20.83	0.00	**69.23**	0.00
Viburnum tinus	26.67	43.75	38.46	29.17	21.05	**69.23**	37.50
Banksia marginata	33.33	18.75	28.21	33.33	10.53	**61.54**	12.50
Bergenia x schmidtii	13.33	25.00	48.72	12.50	15.79	**61.54**	12.50
Eucalyptus delegatensis	0.00	0.00	5.13	8.33	0.00	**61.54**	0.00
Cytisus scoparius	0.00	6.25	5.13	16.67	5.26	**61.54**	12.50
Pelargonium domesticum	53.33	**68.75**	**61.54**	33.33	**68.42**	38.46	**87.50**
Lycopersicum esculentum	20.00	50.00	**76.92**	16.67	21.05	0.00	**87.50**
Beta vulgaris ssp. *cicla*	0.00	25.00	**61.54**	4.17	10.53	7.69	**75.00**
Curcurbita pepo	6.67	31.25	43.59	16.67	10.53	0.00	**62.50**
Pisum sativum	6.67	12.50	33.33	8.33	0.00	0.00	**62.50**
Acacia floribunda	20.00	0.00	15.38	29.17	10.53	7.69	**62.50**

Table 3.4 Mean species richness of garden types

Classificatory group	Number of gardens	Mean number of species
Coastal	15	69
Flower complex	16	213
Production flower complex	39	159
Native	24	98
Species poor exotic	19	80
Woodland	13	177
Vegetable	8	62
All gardens		123

Table 3.5 Mean percentage of species by life form by garden type

Life form	Classificatory group: percentage species by life form (number of gardens)						
	Coastal 15	Complex Flower 16	Production Flower complex 39	Native 24	Species poor exotic 19	Woodland 13	Vegetable 8
Annual	2.59	1.96	2.18	1.88	1.43	1.04	2.06
Bulbous perennial	2.40	6.40	5.52	3.18	4.89	5.04	5.36
Biennial	0.34	0.28	0.68	0.39	0.13	0.38	0.25
Caulescent	1.81	1.01	1.07	1.21	1.87	0.80	0.00
Deciduous shrub	3.80	5.19	6.12	5.19	6.40	6.14	4.62
Deciduous tree	3.21	4.81	4.99	4.15	5.77	6.55	4.74
Evergreen perennial	6.43	5.67	4.95	3.50	5.21	3.63	3.35
Evergreen shrub	28.05	25.21	27.93	38.45	30.23	31.17	24.27
Evergreen tree	15.61	7.04	8.69	17.44	12.84	13.58	17.12
Fern	1.10	2.84	2.44	1.82	2.25	3.40	2.11
Grass	4.04	2.21	1.75	1.33	0.51	1.46	0.68
Herb (culinary)	1.22	1.36	2.05	1.24	1.46	1.69	1.65
Herbaceous perennial	20.65	28.31	22.25	14.42	19.49	18.71	20.82
Succulent	5.28	2.84	3.17	2.43	2.80	1.78	2.51
Vegetable	0.26	0.96	2.13	0.56	0.59	0.68	6.12

Table 3.6 Mean percentage of species by origin and rarity class by garden type

Origin of species	Classificatory group: percentage species by origin (number of gardens)						
	Coastal 15	Complex flower 16	Production flower complex 39	Native 24	Species poor exotic 19	Woodland 13	Vegetable 8
Australia	33.50	16.38	18.57	37.70	18.45	23.16	23.34
Tasmania	3.21	2.91	3.14	3.50	2.44	4.07	3.07
Australia/New Zealand	1.07	0.68	0.87	1.24	1.32	1.18	0.48
New Zealand	2.99	3.28	3.44	3.56	5.27	3.91	2.46
Asia	9.81	19.12	18.28	13.04	20.31	19.82	14.71
Central America	5.37	3.25	3.07	2.80	2.39	2.13	1.96
Europe	3.89	6.77	5.79	3.72	5.26	5.28	5.52
Eurasia	7.28	11.63	10.89	6.92	9.54	9.45	12.51
Mediterranean	8.88	8.00	7.98	6.09	7.76	8.38	8.35
North America	5.42	7.05	6.80	6.01	8.02	6.06	6.66
South Africa	10.37	8.39	8.47	7.31	8.99	5.93	6.69
South America	4.52	7.27	7.59	5.20	5.34	5.70	7.60
Cosmopolitan	3.13	4.12	3.87	2.18	3.80	3.66	5.12
Rare Tasmanian species	3.83	1.44	1.48	2.41	1.53	2.09	0.91

GARDEN TYPES

1: Coastal gardens

There were fifteen coastal gardens. Fourteen were located in the coastal suburb of Cremorne and one at another coastal suburb in Kingston on the opposite side of the Derwent River[21]. Rainfall in Cremorne averages 572 mm per annum, and in Kingston 711 mm per annum. Kingston is an environmentally diverse suburb, with some gardens in close proximity to the beach, and others in hilly terrain some distance from the beach.

The coastal garden type was particularly poor in species richness. Harsh coastal environmental conditions may have limited the number of species. Species richness ranged between 25 and 119 species, with the average being 69 (Table 3.4). The lowest number of species occurred in the gardens of two gardeners who self-identified as 'non-gardeners'. These two gardeners were involved in the audit as a result of snowball selection after neighbours had indicated to them that a garden survey was being conducted by university researchers. The highest number of species occurred in the gardens of three 'passionate' gardeners with allegiance to native gardens.

Five species with more than 20 percent frequency (Table 3.3, Appendix 2) were completely faithful to coastal gardens (a faithful species is confined to a particular garden type): *Tetragonia implexicoma* (53% frequency), *Einadia nutans* and *Senecio*

[21] The Derwent River is a drowned estuary, tidal and considered coastal under the Tasmanian State Coastal Policy, 1996.

pinnatifolius (33%), *Lepidosperma gladiatum* and *Westringia rigida* (20%). Marginally faithful species included *Eucalyptus morrisbyi* (40%), *Atriplex cinerea* and *Poa rodwayi* (33%), and *Delairea odorata and Bambusa* spp. (27%). Two species were both constant (constancy refers to species being present in most gardens of a particular type, and across garden types) and faithful: *Acacia longifolia* ssp. *sophorae* (87%), and *Rhagodia candolleana* (60%). Other species that were highly constant in this garden type were *Poa labillardierei* (73%), *Argyranthemum frutescens* (73%), *Agapanthus praecox* (67%), and *Gazania hybrida* (60%).

Life form richness (Table 3.5) reflected a trend that was common to six garden types (the exception being the native garden type), in that evergreen shrubs and herbaceous perennials constituted the two main life forms. In the coastal garden, 28 percent of the taxa were evergreen shrubs, and 21 percent herbaceous perennials. Almost 16 percent of species were evergreen trees. Most of the trees were stunted due to the environmental conditions. The most common trees were *Agonis flexuosa, Eucalyptus morrisbyi, E. leucoxylon, E. viminalis,* and *Schinus terebinthifolius.* One gardener even had a *Liquidambar styraciflua*, barely 50 meters from the beach. The largest percentage of succulents (5% of species) was in this garden type (Table 3.5). Surprisingly, given the harsh environmental conditions, this garden type also had the highest percentage (3%) of annuals of all the garden types. No reasons can be attributed for this high percentage.

An average of 34 percent of species in this garden type was of Australian origin, with the mean number per garden being 23 species (Table 3.6). Species originating from South Africa, accounted for ten percent of species in this garden type. Almost 50 percent of the species in these gardens originated from the drier environments of South Africa, the Mediterranean and Australia, indicating that the species from these

areas were hardy, salt-resistant and drought-resistant. The remainder of species in this garden type originated from North America, Asia, and Europe. Three percent of species were of Tasmanian origin, and of the seven classificatory groups, this type had the highest percentage of Tasmanian 'rare or threatened' species at 3.8 percent (Table 3.6).

There were two main reasons for including Tasmanian natives as a class in themselves and distinct from Australian natives. First, gardeners in Tasmania pride themselves on having species that are specifically native to Tasmania only. Second, Tasmania boasts a significant number of cool temperate rain forest species (Buchanan, 2005; Curtis & Stone, 1967) not found on the Australian mainland as well as species with ancestral links to Gondwanan (Read, 1999) times. Many Tasmanian gardeners had a sense of wanting to conserve these species and those deemed as 'rare or threatened' species (Buchanan, 2005).

Structural diversity and the physical components of these gardens varied greatly. Three gardens in this type were not maintained, very overgrown, with invasive exotic species. There was no structure to these three gardens, with sand flowing in between plants, smothering some, yet allowing others to dominate. I had to steer a course through this jungle in order to speak with the gardener. In Barry's case, the path to the house wound through a tangle of *Delairea odorata*, *Passiflora mollissima* (two invasive species), and tall *Aeonium arboreum.* He said *I know it's a mess, unkempt and untidy, but I like it this way.* Of these three gardeners, two who self identified themselves as non-gardeners, did not like to garden. They only participated in the survey out of curiosity and hearing about 'someone from the university' doing surveys on gardens. The third gardener *just pottered around* when he had the time. Their gardens had the lowest number of species: 25, 27 and 33 respectively.

There was a group of five (Cremorne) sites that boasted 'native conscious' gardens[22] whose gardeners made a point of trying to grow mainly Australian, if not Tasmanian natives. These gardens also had equal numbers of exotics. According to Tom, *I know I have a large number of exotics (which I inherited) but slowly I am trying to replace these with natives.* Apart from Al, who regarded himself as a 'native purist', the other four research partners in Cremorne also maintained vegetable patches.

These five gardens were informal in structure; their low maintenance was attributed to these research partners' attitudes and practices – *ecological common sense, demonstrated by low water inputs*, as Al explained. The gardens were bushy and deliberately overgrown; there were layers of grasses, ground covers and procumbent shrubs, along with canopy of tall coastal shrubs. A thick covering of leaf litter, mulch, seaweed and hoggings (thick mulch from Eucalypts) was found on bare patches of ground. Easily navigable paths wound around plants and underneath canopies. The stated intention of these research partners in having such gardens was to replicate 'natural' bush settings, and be *ecologically responsible*.

Six gardens in this type were semi-formal and 'gardenesque' in structure. Paving meandered around garden beds and houses; plants were maintained and nurtured. Gardeners described constant and frustrating battles in their gardens – battles with the elements but especially the movement of sand. In Joe's garden, 150 tonnes of rock was brought in to combat the sand by terracing the dune on which he had created his garden (Figure B, photo essay); two hundred square metres of paving was also used to offset the influx of sand. A hedge of *Acacia sophorae*, a local coastal

[22] This group of five research partners constitutes one of the case studies in chapter six.

shrub, was grown along the northern boundary to further protect the house and garden from sand and wind.

The species composition of these six coastal gardens was also eclectic, with more shrubby exotics than natives and a range of flowering daisies, hardy Mediterranean plants, together with a range of conifers. The garden layers tended to be shrubbier (fewer grasses and procumbent plants) than the five 'native conscious' gardens, and there were also more (small) trees in these gardens. Two of these gardens also boasted excessively green and well manicured lawns for that time of year (Autumn April 2004). One lawn surrounded by thick native shrubs could have passed for a golfing green. The gardener maintained it this way as she did not like to sunbake on the beach because of the sand.

The last garden in this type, in Kingston, was relatively new. The garden was on a steep slope, with grassy patches, a few native trees and shrubs, and needing development. Di, who had only been there less than six months intended to make it a native garden, totally informal and with lots of grasses, shrubs and ground covers. She hoped to attract birds and the local fauna to it.

2: Complex flower gardens

The complex flower garden is one of three species-rich garden types. These 16 gardens were scattered around seven of the 13 suburbs surveyed, within a range of original vegetation types, including heathy-woodland/forest, dry sclerophyll woodland/forest and grassy woodland. Rainfall ranged between 532 mm and 650 mm per annum.

The gardens averaged 213 species (Table 3.4) with the range being 122 to 364 species. Two gardens had over 300 species, with the lowest number of species being 122, 126, and 129. The majority of gardens had between 170 species and 250 species.

Five species in this garden type showed total fidelity (Table 3.3, Appendix 2), and did not occur in other garden types. These species were *Eucomis comosa* (50%), *Ixia maculata* (31%), *Coreopsis lanceolata, Ficus benjamina,* and *Verbena officinalis* (all 25%). Other species that showed marginal fidelity included *Verbena hybrida, Diascia barberae, Sparaxis tricolor, Helleborus foetidus* and *Heuchera micrantha* var. *diversicolor 'purpurea'*. Three species were both highly constant and highly faithful to this type: *Anenome hupehensis* and *Cymbidium* spp. (69%), and *Penstemon* spp. (63%). Nine species showed both moderate constancy and a medium degree of fidelity. Some of these included *Scabiosa caucasica, Aquilegia caerulea, Ageratum houstonianum,* and *Penstemon barbatus* (56%). Twenty-four species were highly constant (>69%), but not faithful to the type. These included: *Rosa* spp. and *Azalea indica* (94%); *Hydrangea macrophylla, Aquilegia vulgaris, Agapanthus praecox, Lobelia erinus, Tanacetum parthenium, Viola x wittrockiana, Camellia japonica,* and *Rhododendron* spp. (all >80%). The constancy of *Hydrangea, Camellia* and *Rhododendron* correlates with the high constancy of the same species in the 'gardenesque' type described by Zagorski *et al.* (2004).

Herbaceous perennials (28%) and evergreen shrubs (25%) were the most speciose life forms (Table 3.3), contributing to the species richness and abundance of this type. Other frequent life forms were evergreen trees (7%), bulbous perennials (6%), evergreen perennials (6%) and deciduous shrubs (5%). Some of the more common evergreen trees were *Acmena smithii* (38%), *Metrosideros excelsa* (25%) and *Garrya*

elliptica (25%), among a few conifers. Twelve species of culinary herbs were present (1%), as well as a number of ferns (3%).

These gardens were rich in exotics (80%), with species originating from all parts of the globe, but in particular the northern hemisphere. The most common origin of species was Asia (19%). Despite 16 percent of total species in this garden type originating in Australia, this percentage was the lowest for species of Australian origin of all seven types. Other species originated from Eurasia (12%), South Africa (8%) and South America (7%). Eight percent originated in the Mediterranean, seven percent came from Europe and four percent were cosmopolitan. Tasmanian natives represented three percent of the total species in this garden type, and apart from the Vegetable garden type, the percentage of 'rare or threatened' species was the lowest of the garden types.

Structurally, over half of the gardens took the form of a 'traditional' Australian garden, stereotypical of gardens created on rectangular quarter acre suburban blocks (see Interlude) and reflecting the 'Great Australian Dream' (Boyd, 1987; Davison, 1995; Horne, 1966; Daniels and Kirkpatrick, 2006; Duruz 1995; Holmes, 2000; Kemeny 1981; Seddon, 1997; Taylor *et al.*, 2005; Timms, 2006). Most of these gardens had border beds that abutted onto the fence and that also surrounded the house. Some had garden beds in the middle of lawns, often of various shapes and some extensive in area. The border beds tended to be wide, up to two metres if not more, with ample space to support the proliferation of flowering plants, particularly perennials. Vegetable beds were boxed, distinct, often raised above the normal ground level. Some gardens had lawns that were maintained, others had lawns as token gestures and were allowed to die back in summer; two gardeners were in the process of getting rid of their lawns. Small evergreen or deciduous trees and

evergreen shrubs – described as specimen plants in horticulture – occupied central spaces in these lawns. Deciduous exotic species of shrubs and trees created a visual display both in springtime with prolific flowering and in autumn with leaf colouration. Garden layers consisted of annuals and perennials to one metre, medium to tall shrubs, interspersed between small trees. Terracing was an important hard landscape feature as some of these gardens were on steep slopes[23]. Structurally these gardens were similar to the ones described by Zagorski *et al.* (2004) as 'gardenesque'.

Structurally, the remaining gardens in this type took on the form of a 'cottage garden'. Rambling, a profusion of textures, scents and colour, random in their mix of species, these gardens differed from the gardenesque style. With no apparent borders or beds these gardens were a mosaic of annuals, perennials, herbs and vegetables with shrubs poking out above the smaller plants and a canopy of small trees providing shade and protection. Paths, marked and unmarked meandered through the garden, enabling the visitor or the gardener to indulge and surround themselves in both verdancy and a kaleidoscope of colour. These gardens were devoid of lawns; instead there were pebbled and mulched areas, and in two cases extensive areas of painted concrete (Figure C, photo essay). Some retaining walls were used as supports for training and creeping plants.

Most of the gardens in this type, with their profusion of colour nearly the whole year round, reflected the desire and love of the gardener for flowers. For Raie her garden represented *my idyllic dream garden of continual flowers and colour all year round.*

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[23] Hobart is a city situated in a very hilly environment. As such many of the gardens visited were on medium to steep slopes, necessitating some form of retainment of soil and garden beds.

3: Production flower complex gardens

There were 39 production flower complex gardens scattered throughout Hobart, except in the coastal suburb of Cremorne. These gardens occurred in areas that were originally heathy woodland/forest, grassy woodland/forest, dry sclerophyll woodland/forest and wet sclerophyll forest. Rainfall ranged between 530 mm in Montrose (dry sclerophyll woodland/forest) to 1178 mm in Fern Tree (wet sclerophyll forest). Most gardens tended to be in the drier zones with only five of these gardens in wet sclerophyll suburbs.

This garden type presents a rich heterogeneous mixture of ornamental flowering plants and production plants such as vegetables, fruit trees and herbs. Species richness was not as high as in the complex flower gardens, but was the third highest among the seven garden types. The number of species per garden ranged from 73 to 252. Three gardens had below 100 species. Six gardens had over 200 species. The average number of species in these gardens was 159 (Table 3.4).

No species was totally faithful to this garden type (Table 3.3, Appendix 2). Four edible species were marginally faithful to it although they were not very constant: *Ribes nigrum* (41%), *Brassica oleracea capitata* (38%), *Ocimum basilicum* (36%), and *Capsicum anuum 'Grossum'* (33%). Thirteen species in this garden type were highly constant (>70%) to the group, but promiscuous (constant in other garden types as well). The ubiquitous *Rosa* spp. (95%) was the most frequent taxon in this garden type, in which it had its highest percentage frequency out of all the garden types. Other constant species included *Rosmarinus officinalis* (87%), *Camellia japonica* (85%), *Lycopersicum esculentum,* (79%), *Narcissus* cvs (79%), *Aquilegia vulgaris* (79%), *Mentha piperata* (77%), *Erigeron karvinskianus* (75%), *Fuchsia*

hybrida (75%), *Petroselinum crispum* (75%), *Tropaeolum* sp., (74%), *Dicksonia antarctica* (72%), and *Agapanthus praecox* (72%). These species best characterise this garden type: a mix of flowering ornamentals, vegetables and culinary herbs.

Evergreen shrubs (28%) and herbaceous perennials (22%) were the two main life forms in this type (Table 3.5). Evergreen trees (9%), and deciduous shrubs (6%), were also a common life form of this garden type. Apart from the vegetable garden it had the highest percentage of vegetables (2% of species). The presence of herb species (2%) in this garden type was higher than in all the other garden types (Table 3.5). Unfortunately fruit trees were not considered as a separate entity, but were included as deciduous trees (5%). One of the reasons for the inclusion of fruit trees into the class of deciduous trees was that over the period of the most of the audits (autumn and winter) it was sometimes difficult to identify the species of fruit tree merely by observing the bark. Not all gardeners were present during the audits to enable me to rely upon them for identification.

As with the complex flower garden type, 80 percent of the taxa were exotics (Table 3.6). The two main continents of origin were Australia (19%), and Asia (18%). This garden type again highlights a consistent feature of all the garden types: the relatively high percentage of Australian natives compared to exotic species. Other species originated from Eurasia (11%), South Africa (8%); the Mediterranean (8%), and South America (8%). Three percent of species were of Tasmanian origin. However ‘rare’ Tasmanian species did not feature in this garden type.

The structure of the gardens in this type varied considerably. Some had that same structural formality – the gardenesque – as previously described. Broad border garden beds and an assortment of other beds scattered throughout the middle space of

the garden were a prevalent feature. Other gardens resembled a huge mass planting where whole sites either front or back[24] were devoted to singular garden beds consisting of ornamental flowering plants, herbs, vegetables, fruit trees and even Australian natives – all growing indiscriminately amongst each other. These gardens often resembled the typical 'cottage garden' although there appeared to be greater complexity to their structure, due to the range of life forms. Some gardens lacked any formal structuring of space, apart from perhaps the specific placement of some vegetable patches or, in a few instances, Australian natives being planted around the fences of backyards. Although placement of the fruit trees was random, four of the gardeners had designated 'orchard areas'. These gardeners had large blocks of land and were able to afford a separate area specifically for growing fruit trees. In many gardens berries were grown over wire trellises, up against fences or sometimes used as boundaries between various areas of the garden. Garden layers ranged from grasses to prostrates (ground hugging plants) and procumbents (plants to about knee height), small and tall shrubs, and small trees. In the suburbs of Ferntree and Montrose, there were canopies of tall trees. Mulch was used for weed suppression and water retention, and to balance soil temperature; its decomposition enriching soil fertility and maintaining soil structure. Terracing on steep sloped gardens held back the soil of built-up garden beds and prevented the overflow of mulch. Many of these gardens also had little nooks and crannies with small water features, ponds and garden benches.

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[24] I did not segregate between the 'front' and 'back' garden spaces, as has been the habit of other 'garden' scholars (Head *et al*, 2004; Seddon, 1997; Timms, 2006). My approach in this study was to view the 'front' and 'back' gardens as constituting a whole – a whole that expressed gardeners' engagement in the totality of their gardens.

Some of the gardens had large lawned areas, but only a few of the gardeners seemed to maintain them in a deliberate way. Three gardeners said that they liked their lawns green and well-presented. Generally there was an air of carelessness about the upkeep of the lawns, with gardeners more inclined towards having a floral display and producing food in the garden. Some of the gardens in Lenah Valley and Montrose, where backyards stretched out into bushland, had ‘marsupial lawns’: lawns that were maintained by browsing fauna which had been given free access to gardens. These marsupial lawns were normally situated in the back part of the garden. Gardeners in these areas felt it was important to welcome and allow native fauna to come into the garden and browse. One of the reasons for this welcoming, expressed by gardeners living in these areas, was that too often suburbia becomes an exclusion zone for native animals. These gardeners believed particular efforts should be made in peri-urban areas to let fauna into gardens. To offset the possibility of damage to vegetables by fauna, and particularly by possums, some gardeners surrounded vegetable patches with either floppy fences or cyclone wire fences for this purpose.

4: Native gardens

Nineteen of the 24 gardens identified as native gardens were either from the wet sclerophyll forest suburbs of Fern Tree and South Hobart or the dry sclerophyll woodland/forest suburbs of Mount Nelson, Montrose and Lenah Valley. Three were from heathy woodland suburbs, one from grassy woodland/forest, and one from the coastal suburb of Cremorne. A range of reasons were provided by gardeners for having native gardens. These reasons ranged from a romantic and parochial (as stated by two gardeners) predilection for native species, to regarding native species as best suited to the environmental conditions, and practising *ecological responsibility*. Rainfall varied from 530 mm in Montrose to 1178 mm in Fern Tree.

Species richness was moderate. The highest number of species was 172 in the garden of a committed 'nativist'[25] from Mount Nelson and the lowest 40 from a garden in the suburb of Montrose. There was an equal split of gardens between those with 100 species and those below 100 species. The average number of species in this garden type was 98 (Table 3.4). Six gardeners had native gardens by default rather than by purpose. These gardeners purchased their homes with an already established native garden. They decided to retain this style of garden for ease of maintenance. Five gardeners found natives less expensive to buy and more hardy in the garden than exotics. For another five, their gardens blended in with the bushland areas adjacent to their homes and these they retained as maintaining *the natural setting*. Some

[25] For debates on nativeness, 'native purists' and native species, see *inter alia* Head and Muir, 2004; Low, 2002; Morton & Smith, 1999; Peretti, 1998 and Plumwood, 2005.

embellished their gardens with ornamental exotics, in an effort to provide *more colour to the garden*.

A significant feature of this garden type was that the percentage frequencies of individual species were smaller than in the other garden types. Whereas in the other garden types the highest frequencies were between 85 and 95 percent, the highest frequency of any species in this garden was only 71 percent. However the principal feature of this type of garden was that a large proportion (about 40%) of the species found in these gardens were Australian natives (Table 3.6).

Pultenaea juniperina was the only species totally faithful to this garden type (Table 3.3, Appendix 2), but was not very constant (21%). Three species were both moderately faithful and constant to this type: *Eucalyptus ovata* (46%), *Melaleuca armillaris* (38%) and *Eucalyptus tenuiramis* (33%). A number of other species were moderately faithful, but again they were not constantly present in gardens. Some of the more constant species included *Acacia melonoxylon* (71%), *Callistemon pallidus* (67%), *Dicksonia antarctica* (63%), *Leptospermum scoparium* (63%) and the exotic and ubiquitous *Rosa* sp. (63%).

As most Australian natives tend to be evergreen it was not surprising that the most common life forms in this garden type were evergreen. Evergreen shrubs (38%) and evergreen trees (17%) were the two predominant life forms, showing a disparity with the other six garden types where evergreen shrubs and herbaceous perennials were the two dominant life forms. Herbaceous perennials also featured prominently (14%). Seven species of eucalypt trees appeared in over 20 percent of these gardens: *Eucalyptus ovata, E, pulchella, E, tenuiramis, E. amygdalina, E. ficifolia, E. risdonii,* and *E. gunni.*

An average of 38 percent of species in these gardens was of Australian origin, and a further 3.5 percent were of Tasmanian origin. Species from Asia constituted 13 percent. Exotics from other continents had less than 10 percent of their representative species present in these gardens. Exotics with high frequency included *Agapanthus praecox* (58%), *Cotoneaster* spp. (58%), *Fucshia* spp. (50%), and *Rhododendon* spp. (50%).This garden type had 2.4 percent 'rare and threatened' Tasmanian species. Nineteen of these 24 gardens had between one and eight such species. In total there were 62 'rare and threatened' species present in these 19 gardens. Two of the gardeners had 16 between them.

Structurally most of these gardens were informal, rambling and bushy with dense plantings of natives. Some were poorly maintained, particularly those in the suburb of Montrose. Twelve gardeners in this type specifically identified themselves as native lovers, and were intent on having gardens that reflected bushland settings. Rather than having a demarcation zone between gardens proper and the bush (most of these 12 gardens backed onto native bushland), their gardens were incorporated into bushland. Peter typified this attitude: *I do not wish to have a garden separate from the bush; but one that flows into and is part of the bush. I love the Australian bush, so why should my garden not be the Australian bush?* Sometimes there was difficulty trying to distinguish between the garden and the bush. Fences made it easy to identify species within the garden proper; if there was no fence, for the purposes of the audit I requested the gardener to describe where boundary or edge of the garden occurred (cf. Head and Muir, 2006). These 12 gardens did not have lawns; they had either local leaf litter or mulch covering the soil, or the area was planted out in local grasses (*Austrodanthonia* spp., *Austrostipa* spp., *Themeda triandra*, and *Ehrharta* spp.) and a range of ground covers.

Garden layers ranged from low ground covers, procumbent grasses, medium shrubs, small trees through to tall forest trees that in some of the gardens formed a dark upper canopy. Often the sense of smell was dominated by the pungency of eucalypts. Many of these gardens that were situated upon steep slopes had timber landscaping features, in particular terraces. Some had retaining walls and paths and steps made out of timber, or locally acquired dolerite rock. In larger blocks pathways meandered in and around the assortment of shrubs and trees. Nine of these 24 gardens retained their lawns, mainly as an area in which children could play. However, from observation and discussion with gardeners little emphasis was placed on their upkeep. Four of these gardens also incorporated vegetable patches and had the occasional fruit tree in the backyard.

5: Species poor exotic shrub gardens

The 19 gardens in this type were scattered in all suburbs except the wet sclerophyll suburbs of Fern Tree and South Hobart, and the coastal suburb of Cremorne. Twelve of these gardens were in suburbs that were in dry sclerophyll woodland/forest, the others from heathy woodland and grassy woodland/forest. Six of these gardens in Montrose were in what was originally a dry sclerophyll forest. Rainfall ranged from 501 mm at Acton Park to 666 mm at Mount Nelson.

The number of species in this garden type ranged from 28 to 152 species. Twelve gardens had below 100 species, with five gardens having 50 species or below. The average number of species in this garden type was 80 (Table 3.4). One reason for the smaller number of species was that a third of the 19 gardeners in this garden type identified themselves as part-time gardeners, expressing lack of time and other commitments to fully engage in the garden. Three gardeners in this garden type self-

described themselves as ‘non-gardeners’, but curiosity caused them to participate in the audits.

Ten species (>60%) were constantly present in this garden type (Table 3.3). All these tended to be hardy species. *Rosa* spp. was again the most constant (95%). Other constant species included *Coleonema pulchrum* and *Dicksonia antarctica* (74%), *Lobularia maritima*, *Pelargonium domesticum*, and *Argyranthemum frutescens* (68%). No species in this garden type was totally faithful (Appendix 2), though a deciduous tree, *Fraxinus excelsior ‘aurea’* (26%), was moderately faithful. Two other species were also moderately faithful, but low in constancy: *Cupressus sempervirens* cvs, and *Lathyrus odoratus* (21%). A feature of this garden type was the presence of two small trees *Pittosporum eugenoides* (47%) and *Photinia* spp. (42%) both of which correlated with the marker species described as the ‘Exotic Shrub Garden’ by Daniels and Kirkpatrick (2006) and Kirkpatrick *et al.*, (2007). These two however were neither faithful nor constant to this garden type, however one, *Photinia* spp. is a very common hedging tree around suburbs in Hobart.

Evergreen shrubs (30%) and herbaceous perennials (19%) were again the two most common life forms followed by evergreen trees (13%). Deciduous shrubs (6%) and deciduous trees (6%) were the next most common life forms. The lowest percentage of ornamental grasses (1%) of all the garden types occurred in this garden type. Consistent with other garden types, apart from the coastal and native gardens, 80 percent of species in this garden type were exotics.

A possible reason for the relatively high percentage of trees (evergreen and deciduous totalling 19%) in this garden type was that two of the gardens with a higher number of species (152 and 96 species) were from the grassy woodland

suburb of Acton Park. These two gardens were on large properties of over five acres sustaining 20 to 30 trees, the dominant types of trees being eucalypts and acacias, which were planted around the periphery of the garden. A third species rich garden (127 species) in this type with a large number of trees was located in Montrose. This garden had a yard that extended into bush behind the block, and the original bush constituted part of the garden. Ross, the gardener, told me that when his own house was under construction he had insisted that most of the trees be retained and the original landscape be minimally disturbed. He also conveyed his concern at the manner in which subdivision and building occurred in Australia[26]: *The builder or developer comes in and razes everything destroying the landscape, the bush and local habitats.*

Seven of the gardens that had below 100 species had very few trees in the garden, and native species were conspicuous by their absence. The highest percentage of species originating in Asia (20%) of all garden types was represented in this garden type. The next most common origin of species in this garden type was from Australia (18%). After the 'complex flower garden' this was the second lowest percentage of Australian natives among all the garden types. A relatively even mix of species originated from four other geographical areas of the world: Eurasia (10%), South Africa (9%), North America (8%) and the Mediterranean (8%). The lowest number of Tasmanian natives occurred in this garden type with a percentage occurrence of 2 percent. 'Rare and threatened' Tasmanian species were not found.

[26] Seddon (1997, 149) refers to this tendency as well: 'the block has been surveyed, the bulldozers have done their work, cleared away trees and topsoil… the birth of the suburban garden'.

Apart from the two gardens in Acton Park, all the gardens displayed little or no structure. The Acton Park gardens were formal to semi-formal in their structure, in many ways resembling the 'gardenesque' style (Zagorski *et al*. 2004) with large exotic beds around houses and manicured lawns in close proximity to them. Larger grassed areas further from dwellings and surrounded by fences supported a small population of sheep, or were home to a few ponies and horses. Many of the gardens in this type were poorly maintained and often reflected gardeners' lack of time and effort to garden, or an expressed lack of knowledge and skills in gardening practices. Another dominant feature of most gardens in this garden type was the presence of large grassed areas dotted with plants, 'usually treeless, with hedging shrubs and lawn' (Kirkpatrick *et al*., 2007, p. 320). In others there were garden beds, some of which had shown attempts at being weeded but in the main most were a proliferation of weeds and shrubs competing with one another. Only a few of the lawns were maintained; others were left to *do their own thing*. In some cases it was easy to see that even some hardy species were struggling to survive. Pruning and general maintenance of plants did not appear to be a priority. As Alan, a non-gardener pointed out: *I have been here for 30 years: my wife and I planted the plants you see 30 years ago, and somehow they have survived. We do nothing in the garden except mow the lawn.* Three self identified non-gardeners stated that they had little time for gardening, and could do better things with their spare time. Financial constraints were a major consideration and four gardeners told me that though they liked gardens, gardening was not a priority for them since there were other day-to-day living expenses to consider.

6: Woodland gardens

This species rich garden type consisted of 13 gardens in the wet sclerophyll suburbs of Fern Tree and South Hobart. High rainfall of 1178 mm per annum is an influencing variable in these areas, determining species abundance and richness in the gardens. The number of species ranged from 93 to 330. Only one garden had below 100 species; seven gardens had between 100 and 200 species, and the rest had over 200 species. The average number of species in this garden type was 177 (Table 3.4). Twelve of the gardens bounded onto bushland, and consequently many had native species to complement the large numbers of exotics.

This garden type had over 35 individual species, both native and exotic, that were highly constant (>60%) to the type (Table 3.3). Some of the most constant species, over 80 percent in this case, included *Dicksonia antarctica* (100%), *Rosa* spp., and *Rhododendron* spp. (93%), *Azalea indica, Camellia japonica, Narcissus* cvs, *Erigeron karvinskianus*, and *Betula pendula* (85%). Three species, all native, were highly faithful and constant: *Eucalyptus regnans* (77%), *Olearia argophylla* (69%), and *Eucalyptus delagatensis* (62%). Thirteen species (>40% constancy) were moderately faithful (Appendix 2). These included two bulbous perennials *Leucojum vernum* (54%) and *Ipheion uniflorum* (46%), two environmental weeds *Leycesteria formosa* (54%) and *Pinus radiata* (46%), a fern *Blechnum penna-marina* (46%) and a host of Tasmanian natives, *Olearia phlogopappa, Anopterus glandulosus, Bedfordia linearis, Nothofagus cunninghamii* and *Prostanthera lasianthos* (all 46%). Three species were totally faithful but low in constancy. These three species were all Tasmanian natives, *Cenarrhenes nitida* and *Prionotes cerinthoides* (31%), and *Olearia glandulosa* (23%).

Consistent with five other garden types, evergreen shrubs (31%) and herbaceous perennials (19%), were again the two dominant life forms. Evergreen trees (14%)

were the next dominant life forms in this garden type. The highest proportions of both deciduous trees (7%) and ferns (3%) of all the garden types occurred in this category. Ferns thrived in the moist and cool conditions of Mount Wellington. Deciduous shrubs represented 6 percent of total species in it. This garden type also boasted the lowest number of succulents (2%) and annuals (1%), of all the garden types.

Australian species accounted for an average of 23 percent of the total number of species in the gardens, making this garden type comparable to types one and four in terms of Australian native richness. Given the location of this garden type (wet sclerophyll, 400+ m. above sea level) Australian species tended to dominate (23%). The next major continent of origin was Asia (20%), followed by Eurasia (9%) and the Mediterranean (8%). The largest number of Tasmanian native species out of the seven garden types was found in this garden type (4%). One reason for this high percentage of Tasmanian species was the manner in which these gardens integrated with native bushland, and gardeners wished to maintain if not extend this integration. 'Rare and threatened' Tasmanian species occurred in 2 percent of these gardens.

Garden structure was highly complex. Most of the gardens were extensive in area, rich in Australian and local native species and on slopes that often included a gully. Twelve of the gardens had bushland immediately behind them. Their eclectic species composition and *ad hoc* mixing of plants to imitate the haphazardness of the bush, was an expressed manifestation of gardeners' desires and intentions. Judy stated: *I love the bush; I also love both exotics and natives. I have tried to combine the two so they somehow mirror the natural setting and harmonious interplay of plants in the bush.* Generally these gardens were rambling, covered in ground covers, prostrates, and climbers. All species and life forms of plants were mixed in together in the

garden. Leaf litter, natural mulch and twigs from shrubs and trees were scattered on the ground. In springtime these gardens had large showy displays of daffodils and other spring flowering bulbs, breaking through the litter on the garden floor. These bulbs often appeared in clumps under copses of deciduous trees. The understorey, dark below the tall tree canopy, often had largish shrubs with exposed, arching limbs, on which hung bird houses and below which there was nearly always a garden seat. Barely discernable paths wound through the garden with no apparent destination. With no formality to these gardens, the scene painted was typical of a European 'woodland' setting – the main difference being the ubiquitous presence of eucalypts and the smell of the Australian bush. These gardens were often well shaded and benefited from an abundance of rain which kept the soil moist for most of the year.

Woodland in feel and semi-formal in structure, one garden designed by a French landscape artist in 1972 after the devastating 1967 Hobart bushfires represented a miniature botanic garden. However, its formality did not detract from its woodland character. This garden sloped away to the north with a vista of Mount Wellington in the background, blending in with the bush behind its boundary. Grandiose, serpentine garden beds, dense with plants both native and exotic, were complemented by expanses of 'marsupial lawn'.

Although it did not bound onto bush, the thirteenth garden of this type nevertheless had a strong woodland feel about it. It consisted mostly of exotics with only three or four native species. However, the feeling captured by the gardener was a woodland garden of European extraction: very overgrown and dark, little paths, deciduous trees and shrubs, bulbs in winter time, perennials scattered here and there, thick layers of deciduous litter. Mary, a writer, stated of this, her garden:

I just planted things… lots of them… plants that were deciduous… I wanted a woodland garden that had low overhanging branches, covered in leaves in spring, but bare in winter… dark alleyways, where you could sneak through, places you could hide in… a secret garden.

7: Vegetable gardens

The eight gardens in this type were species poor, the number ranging between 33 and 120, the intermediate number of species being 42, 47, 49, 53, 57 and 96 species, with an average of 62 species, the lowest of all the seven garden types. Vegetable gardens occupied a range of environmental types including grassy woodland, heathy woodland/forest, dry sclerophyll woodland/forest and wet sclerophyll forest. Three of the gardens were located at Bridgewater, a northern suburb, and one garden each was located in the suburbs of Howrah, South Hobart, Blackman's Bay, Lenah Valley and Acton Park. The five acre garden at Acton Park had the greatest number of species at 120. The gardener there had a thriving vegetable and fruit garden along with a range of other species.

Although some authors (Bhatti & Church 2000, 2001; Mullins & Kinaston, 2000) have stated that subsistence (food production) gardening is on the way out or has disappeared from domestic gardens, the presence of this specific type of garden would suggest that production of food in gardens is still popular. Both Francis and Hestor (1990) in the United States and Head *et al*., (2004) in Australia refer to the continuing tradition and popularity of suburban food production amongst ethnic groups. Interview material from research partners with ethnic backgrounds indicates

this tradition and popularity. Gaynor (2006) argues that there is sufficient evidence for the continuing popularity of production gardens in Australia. Many research partners from other garden types referred to their preference for growing fresh organic produce free from chemical input (see chapters four and five). For these research partners the garden was a place for enjoying both ornamental plants and having the option of growing vegetables; it was a matter of perception and the make up of the garden. A perusal of the species composition data also indicates that the percentage frequency of vegetables grown in other garden types corresponds with the percentage frequency of vegetables grown in this specific vegetable garden type. However to do justice to Bhatti and Church, their reference point is the downsizing of suburban blocks in Great Britain due to decreasing availability of land (a similar phenomenon occurs in Australia as well, and is mentioned by Seddon [1997] amongst others).

No species in this garden type was totally faithful. There were some marginally faithful species, but these were low in constancy (Table 3.3, Appendix 2). Seven species (>60%) were constant to this group. *Lycopersicum esculentum*, and *Pelargonium domesticum* (88%) were the most constant. The ubiquitous *Rosa* spp. (75%), *Beta vulgaris* ssp. *cicla* (75%), *Curcurbita pepo* (63%), *Pisum sativum* (63%), and *Acacia floribunda* (63%), were other constant species. *Brassica oleracea botrytis* (50%) is the most faithful species to this type.

Evergreen shrubs (24%), herbaceous perennials (21%), and evergreen trees (17%), were the predominant life forms in the gardens. Vegetables which are the distinctive life form of this type represented 6 percent of species. Notably this proportion is the highest of all the seven garden types. Caulescent (palm like) life forms present in all

the other garden types were absent from this garden type. No other life form stood out.

Twenty-three percent of species originated in Australia, followed by Asia (15%), and Eurasia (13%). Species originating in Tasmania were comparable to other garden types at 3 percent. This garden type had the highest percentage of cosmopolitan species of all seven types. ‘Rare and threatened’ species did not occur.

Apart from the one garden at Acton Park, the gardens in this group were nondescript, and low in species richness. Structurally the gardens in this type all had vegetable patches in designated areas of the garden to take advantage of a northerly aspect. These were exceptionally well-tended, reflecting the effort and time that went into them in order to maintain self-sufficiency. The remainder of these gardens consisted of grassy patches that could barely be described as lawn, with the occasional shrub or conifer scattered throughout the yard. Some had other garden beds, most of which were overgrown, with a smattering of shrubs or perennials eking out an existence amongst the weeds. Generally however, the garden was the vegetable patch. The garden at Acton Park on a larger block had a similar structure to the previously described ‘gardenesque’ style. Large beds around the house supported a range of mainly exotics, with larger native trees around the periphery of the block. A small section of lawn outside the back door and between the garage was well maintained. Beyond the immediate vicinity of the house and garden were large expanses of lawn maintained by a number of sheep.

Four of the gardeners in this garden type specifically stated that their priority in having a garden was to grow their own produce in order to save on food bills. Three other gardeners, in keeping with vegetable growers from other garden types, said it

was more important for them to grow their own fresh vegetables, devoid of chemicals, and with the knowledge that their vegetable seeds have not been tampered through genetic manipulation. Apart from these reasons for growing vegetables, gardeners in this garden type expressed the benefits and pleasures of growing and harvesting their own food.

THE GARDENERS

This typology of suburban gardens in Hobart, with its focus on species composition and richness, needs to be complemented by insights into the profiles and identities of the gardeners who formed my research community. The presentation of the profiles of my gardeners will provide a reference point for understanding their motivations for being involved in the craft of gardening. The profiles will also give substance to the following three chapters where I explore gardeners' engagements with their gardens and examine how the foundational and extended qualities of stewardship have found expression through these engagements.

Most of the gardeners involved in the project were volunteers who contacted me as a result of a newspaper article in *The Sunday Tasmanian* (see chapter one). Many of the interviewed gardeners regarded themselves as 'real' gardeners (see chapter four). As volunteers and 'real' gardeners their input into the project cannot be underestimated. I identified interviewed gardeners as *research partners* as an acknowledgement of their willingness to participate in and a tribute to their involvement and commitment to the project. For some partners, particularly those involved in the participatory action research (and numerous others who participated in the interviews only), their involvement was personal, extensive and intensive, and required a significant investment of time, effort and contribution. Their dedication

and immersion into their gardens; their engagement in gardening practices that resonated with a sense of stewardship, and their interest in pursuing a range of themes associated with gardens and stewardship provided extensive information and insights into the project. These findings and insights are borne out in the next three chapters.

Within the total sample of 134 gardens, gardeners' ages ranged from 26 years to 86 years. There were five gardeners who were aged below 30 and 19 were over 70 years of age. Seventy six gardeners were aged between 30 and 50. Seven of the 'senior' gardeners were over 80, and four of these had been gardening for over 60 years. Consistent with other studies (Bhatti and Church, 2004; Kirkpatrick *et al*, 2007; Sanders, 1984), where the average age of gardeners was in the range of 50-60 years, the mean age of the 134 gardeners in this project was 51 years. A total of 34 gardeners indicated they were retired from full time work (two were young retirees at the ages of 52 and 54 respectively), and six were unemployed. Significantly gardeners who were involved in the extended interviews ranged from the youngest (26) to the oldest (86). It would appear that gardening appeals to people of all ages. This was borne out in the interview material presented in the following chapters.

The gender mix of female to male gardeners was 2:1. Of the total of 134 gardeners, 80 were females, 44 were males and there were 10 couples. These statistics are at odds with one other study relating to the gender mix of gardeners where Bhatti and Church (2000, 189), utilising data from a broad survey of attitudes to gardening in Great Britain by Mintel (1999), showed the proportion of female to male gardeners to be about 1:1. The reason for the difference may be that the current project used a different research design to that of Bhatti and Church. I was unable to determine any other reason for the greater proportion of female to male gardeners.

The background profiles and identities of gardeners were diverse: ordinary people from ordinary walks of life. There were teachers, horticulturalists, single parents, airline pilots, students, unemployed, dancers, administrators, fishermen, factory workers, naturopaths, professionals, farmers, geomorphologists, forensic scientists, ecologists and many more. Culturally diverse, there were gardeners whose ethnic origins were Austrian, Chilean, Croatian, English, German, Greek, Dutch, Irish, Italian, Japanese, Latvian, Polish, Scottish, South African, and Swiss. The cultural diversity presented itself as a distinct feature of their understanding and practices within their gardens. Some were practising Christians, some Buddhists, others New Ageists; one made the point of identifying himself as a Marxist. Some were 'eccentric characters', some were reclusive, others extrovert in the expression of their garden, as evidenced in their selection of species and the way they structured their gardens. One considered herself as having specific insights into gardening because she conversed with the Divas in her garden. She said she was influenced by the 'Findhorn Miracle' (The Findhorn Community, 1979). There were story tellers, some lonely people, and a few, though suffering illnesses, still keen to be involved and have their story told. One gardener insisted that her two young children be present in the interview as part of her *educating them into the world of nature and gardening* (Susanne). Most however, intimately involved in their garden were enthusiastic and generous about contributing their experiences of the garden.

Some gardeners expressed a passionate attachment to the garden that was demonstrated in numerous ways. Three identified themselves as 'native purists' (see 'native purists' in Plumwood, 2005) in their pursuit of certain gardening ideals and practices and appeared to be on a crusade to convert others to their mode of gardening. The motivation of these was a commitment to practise *ecological*

responsibility[27]. There were other research partners who voiced strong convictions about other gardening attitudes and practices. Many admitted to having a loving relationship with their gardens, sometimes expressed as an attachment to certain plants, or styles of gardening (cottage garden) or even practices (earth friendly practices). That relationship was often translated as a desire to share the stories of their gardens. Stories characterised by many levels and contexts, by dreams and desires, frustrations and challenges. Many shared the physical make-up of their gardens, and the reasons for that make-up. Sharing of their knowledge and skills was as common as their admission of ignorance about gardening and gardens. The meaning and roles of the garden in their lives and throughout history was a theme that filtered in and out during the interviews. Many expressed reasons for the maintenance of traditional gardening practices as a critique against the current commercialisation of gardens. The attachment to their gardens was also a reflection of their strong relationship with the greater garden of the Earth. This greater garden which they saw reflected in *their own small patch of paradise* (Cynthia). One 86 year old female gardener summarised the connection of the gardener to the garden thus:

> *If more people took up gardening, all sorts of gardening, we might very well have a more peaceful and harmonious planet. Gardening not only brings people of all races, creeds and classes together, it also puts us back in touch with our origins and the mystery of our relationship to nature* (Gwen).

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[27] In a recent paper, Osbaldiston & Sheldon (2003), explore motivations that bring about responsible environmental behaviours. Results of a study they conducted indicated that internal motivation rather than external motivations accounted for behaviours that were environmentally responsible.

RELATIONSHIP BETWEEN GARDEN TYPES AND STEWARDSHIP

The purpose of developing this garden typology was to provide crucial material evidence that the garden is a microcosm of the Earth. The garden typology with its focus on species composition and richness also provided a background and an opening to examine gardeners' preferences in plants, their attitudes and practices, and their understandings and attachments to their gardens. Species composition of gardens is also integral to the idea and space of garden. It is the basis of practising the craft of gardening: of looking after plants and being involved in those elements that contribute to their growth, health and vitality. Gardeners have intimate relations with the plants in their gardens. The range and number of plants points to the diversity of plants in a garden. Identification of species and the species richness of gardens add to the story of gardens and stewardship.

By combining the profiles of the gardeners with the garden types, it may be possible to discern a relationship between garden types and stewardship; in particular which garden types or some gardens within a specific garden type reflect some sense of stewardship. However, it needs to be stated that ultimately it is the individual gardeners' preferences, their sense of the craft of gardening and their understanding of stewardship that determines whether or not there is a specific relationship between particular garden types and inclinations towards stewardship. Whilst the typology may represent some gardeners' inclinations to particular styles (cottage or native or woodland gardens), in most cases the garden types are a reflection of gardeners predilections towards certain species.

It would appear that the native garden and the woodland garden seem to best express a relationship with stewardship. With the native garden, the focus on having natives by most of these gardeners was often accompanied by a mindful concern for ecological responsibility, and caring and showing respect for native ecosystems. Frugality, as an extension of reverence, and prudent use of resources (in particular water) was a characteristic of gardeners who were enmeshed in this garden type. For some of the gardeners a strong sense of ethical behaviour in the garden also flowed from their concern for the future of the greater garden of the Earth. More than half the gardeners in the coastal garden type had gardens with a high percentage of natives, showed similar ethical behaviours and also had this strong concern for the Earth.

The woodland gardener, espoused similar stewardship qualities as the native garden, but also went beyond. Woodland gardeners often valued mindful consideration of acting and treading gently in the garden, and treating all living things with respect and love. Gardeners nurtured the naturalness of the garden. In four instances gardeners expressed the joy of being immersed in this natural beauty. Gardeners of this garden type also had a deep sense of ethical responsibility for the integrity of ecosystems and habitats.

Within the complex flower garden the large number of species (213) was an expression of the gardeners' love for plants and their joy in having a colourful garden. Complex flower gardeners often expressed aspects of a stewardship ethic: mindfulness in the way they gardened, sensual immersion into the proliferation of colour and fragrances, reverence as a deep sense of caring for their gardens; and, a sense of doing the right thing (ecologically) in their garden.

The production flower complex gardens appeared to express fewer stewardship qualities in comparison to the three mentioned above. There were gardeners of this type who certainly espoused strong stewardship values, as described above. However, there seemed to be some gardeners with a predilection to overuse of resources (particularly water and chemicals), resulting in a less mindful and caring relationship with the garden. In this garden type there were also more gardeners who were attracted to the garden as a commodity, and as a status symbol. Of all the garden types the species poor garden had the least number of gardeners who expressed a sense of stewardship. This garden type, had the largest number of 'non-gardeners' (six out of a total of 15 for all 134 gardens) within the sample. Interestingly, the vegetable gardeners, with their focus on food production, espoused many of the values of stewardship. These gardeners wanted to nurture, cultivate and till the soil for their (and other organisms) benefit. In conclusion, it may be said that the co-creators of all garden types manifested many or some qualities of stewardship.

I now turn my attention to the understandings of gardens, the values and attitudes of research partners towards gardening and the implementation of these through gardening practices.

PHOTO ESSAY

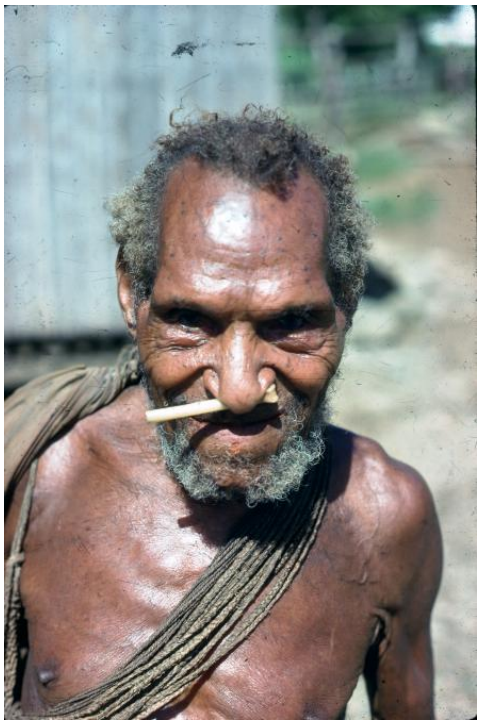

Figure A: Old Man Nenewee from Papaua New Guinea

Figure B: Luscious coastal garden at Cremorne

Figure C: Flower Complex Garden in Lenah Valley

Figure D: Production Flower Complex Garden at Howrah

Figure E: Native Garden at Mt. Nelson

Figure F: Species Poor Garden in Kingston

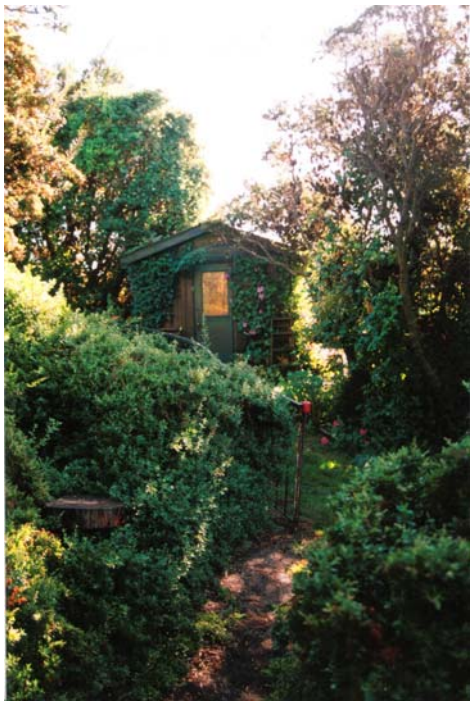

Figure G: Woodland Garden in Ferntree

Figure H: Vegetable Garden in Lindisfarne

Figure I: Case Study One: developing new beds

Figure J: Organic gardening methods pointing to stewardship

INTERLUDE

An inter-disciplinary study of gardens requires sensitivity to different contexts and meanings[28] applied to and derived from gardens. These contexts may be geographical and environmental, social, cultural and political; they may also be determined by different ontologies (Cooper, 2003, 2006). Gardens are complex ecosystems and hybrid spaces of nature and culture (Pollan, 2002). Franklin (2002, 162), for example, argues that 'a gardening relationship with the natural world does not exist independently of social and cultural contexts'. In particular gardens are shaped by class, ethnic, gender and economic relations (Bhatti & Church, 2000, 2001, 2004; Duruz, 1994, 1995; Francis & Hestor, 1990; Head *et al*., 2004; Holmes, 2000; Probert, 2000; Sanders 1984; Seddon, 1997; Timms, 2000, 2006). Nevertheless, gardens may also be viewed as stage-settings for understandings of place and the role of humans in the 'garden of the earth' – a kinship (Ruether, 1992) with the 'more than human world' (Abram, 1996, 22). This kinship – in all its diveristy – is the crux of stewardship.

In this Interlude my focus is on a brief history of gardening in Australia. It is argued that gardening attitudes and practices in Tasmania reflect a larger national setting.

[28] A few scholars have entered the debate on meanings of gardens. Though approaching gardens and gardening from different perspectives, most noteworthy amongst these are: Bhatti and Church, 2001, 2004; Cooper, 2006; Francis and Hestor, 1990; Franklin, 2002; Head and Muir, 2006; Head *et al*., 2004; Kaplan and Kaplan, 1990; Kurtz, 2001; Ravetz and Turkington, 1995; Relf, 1992 and Seddon 1997.

Tasmania's colonial history parallels the history experienced on the mainland of Australia. Tasmania's planners, surveyors, major land-holders and decision-makers were working in common and in tandem with their counterparts on the mainland. The attachments to European – and especially to English – landscape and garden design gained expression in Tasmania in ways that mirror their appearance in other places around Australia. Arguably Tasmania's similarity to English climate and topography also made expression of Anglo-Saxon aesthetics easier than on the mainland. In postcolonial times, the sorts of legislative, regulatory, commercial, horticultural and cultural influences that exist on the mainland also exist in Tasmania.

Australia – an archipelagic 'continent' of over 8200 islands[29] – is a place of varying landscapes and beauty. It is 'a place of contradictions and strange enigmas' (Bligh, 1973, preface); a land of both fecund and inhospitable landscapes, severe and contrasting climatic conditions, and flora and fauna that have evolved with distinct adaptations to cope with poor infertile soils and climatic extremes. Despite these characteristics, many Australian gardens have reflected and continue to mimic English and European gardening styles, an attachment to aesthetics, and practices alien to the Australian environment. From earliest colonial days, gardens were developed to grow food for survival using seed and plants brought across from Europe and other colonial spaces (Aitken, 2004; Baskin & Dixon, 1996; Cuffley, 1983; Johnson, 1999). Despite the perception and experience of a harsh environment, the early colonial gardeners recognised that 'foreign plants could be successfully

[29] Refer Australian Government, Culture and Recreation Portal http://www.cultureandrecreation.gov.au/articles/islands. Accessed 22/01/07.

introduced and acclimatised' (Bligh, 1973, 23) into this environment. Later, gardeners could afford to move from simply productive to composite gardens that included ornamentals, most often plants from the northern hemisphere. From those early colonial times, experimentation, involvement, interest, and creation of gardens throughout Australia continued in step with an evolving nation.

From the 1850s until the end of the nineteenth century, 'prosperous citizens [especially] ensured that the popularity of gardening became an even greater' (Bligh, 1973, 79) preoccupation with people. This popularity was marked by emulating the growth of landscaped garden estates of Europe and the Americas (Pollan, 2002; Seddon, 1997). Part of 'civilising' the land occurred through horticultural and acclimatisation societies[30] and publications (Aitken, 2004; Low, 2001; Timms, 2006) as well as the encouragement of gardening and horticultural pursuits. Most of the species proclaimed by 'acclimatisation societies' and brought to Australia were those which people were most familiar, couched in sentimentality and originating in Britain and Europe (Low, 2001). However, in Great Britain, botanists' exaltation (Hobhouse, 2002; Thacker, 1979) of Australia's unique flora influenced English gardeners and plant collectors, who used Australian plants in their gardens; conversely, colonial gardeners were reticent about planting native flora of Australia in their gardens, pre-occupied – as they were – with ornamentals plants from the northern hemisphere (Aitken, 2004; Bonyhady, 2000; Hoyles, 1991). Plumwood[31]

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[30] Acclimatisation Societies were started in Australia in the 1860s (Franklin, 2006; Low, 2001; Plumwood, 2005; Rolls, 1969). Their role was to introduce and 'redistribute animals and plants from around the globe for mankind's betterment and pleasure' (Low, 2001, 31).

[31] Plumwood (2005) explores in detail factors that have influenced this reticence on the part of Australian gardeners to develop and plant natives in their gardens. In the same paper she mentions

(2005, 2) explains this reticence further by stating that 'the colonising dynamic, involved not only the devaluation of native plants, but the imposition of domestication and Eurocentric ideals of beauty'. However, over time, a hybridised form of gardening culture did emerge in Australia. This hybridised culture was partly based on emotional, indeed nostalgic, ties with Great Britain and perpetuating gardening practices from there (Aitken, 2004; Bligh, 1973; Halligan, 2000; Plumwood, 2005; Seddon, 1997; Timms, 2006), and partly being informed by insights derived by generations of Australian gardeners, as they came appreciate the limits and potential of indigenous species and the Australian landscape.

A peculiar feature of colonial and later Australian land management in settlements, and one in which early colonial cadastral surveys were a cultural force, was the creation of the quarter acre block with house and garden. The proliferation of the quarter acre block was foundational to the suburban landscapes that comprised Australian settlements from early days (Seddon (1997)[32], right up to the present moment. Generally, these surveys used the rectilinear grid and (re)enforced 'a strong consciousness of the individual boundary' (Seddon, 1997, 150). This individual boundary is the ubiquitous fence (Baskin & Dixon, 1996; Davison, 1995; Johnson, 1999). The cadastral codification also delineated the back yard from the front yard (Mayne-Wilson 2005; Seddon, 1997; Timms, 2006), each of which took on different values and expressions. Typically, the back yard was set aside for growing vegetables and private familial recreation. The front yard was neat and tidy with

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colonisation and commodification as the two main influences affecting the character of contemporary Australian gardens.

[32] On the related phenomenon of the Australian dream of home ownership, see Boyd, 1987; Davison, 1995, 1997; Fiske *et al*., 1987; Horne, 1966, 1989; Kemeny, 1981; and Turner 1968.

ornamental plants, a row of standard roses, a patch of lawn and perhaps a specimen tree, normally deciduous. The front garden was a public space, an object of visual importance to the passer by. The narrow sides on either side of the house were used as utility areas (Johnson, 1999; Lochhead, 1987).

Into the twentieth century, a number of other factors influenced the changing character of Australian gardens. Notions of nationhood, rising population and growth of cities, a transition from primary to manufacturing industries, a world war followed by a depression and another global war, also contributed to the character and growth of Australian gardens. Until the end of the Second World War, the significant influence on Australian gardens and gardening continued to be the English style of approach (Bird, 2000; Duruz, 1994; Seddon, 1997). Yet after 1945, refugees and migrants to Australia from Europe – and particularly southern and eastern Europe – brought with them the traditional organic gardening practices of their homelands (Gaynor, 2006; Head *et al*., 2004). These immigrants perceived the garden primarily from utilitarian, productive perspectives – growing new species and varieties of vegetables and fruit, raising poultry, and being relatively self-sufficient. In many cases both front and back yards were devoted to food production; flowers were secondary adornments or companion plants (Head *et al*., 2004). Later waves of refugees and migrants from Southeast Asia, south Asia, the Pacific, and southern and eastern Africa have all contributed culturally inherited gardening practices and attendant values to this hybridising of the Australian gardening landscape. In the 1970s, for example, Vietnamese and Cambodian ‘boat people’ reaching Australian shores spurred a growth in market gardening, at least some of them also using organic methods of cultivation (Head *et al*., 2004; Ben Nguyen, pers. comm. 1996;

Wahlqvist, 2002). Allied with this growth was the introduction of a range of Asian vegetables and herbs to the domestic gardening and culinary range.

Whilst garden style and fashion existed in the inter-war years, if not before (Timms, 2006), since the late 1980s the garden in Australian suburbia has increasingly become a site of commodification in which fashion and image are privileged. Gardening, according to Hitchings (2003, 101), 'is positioned as a display of status and not an engagement with the natural world'. Indeed, the garden has become a commodity and a site of consumption rather than of production, of sharing cuttings and skills, of time honoured engagement in it, or even developing it for aesthetic purposes. What is apparent in this commodified outlook is a depreciation of the intimate relationship between gardener and garden. This commodified perspective holds true in both the Australian domestic landscape and abroad (Bhatti & Church, 2001, 2004; Duruz, 1994; Franklin, 2002; Hitchings, 2003; Longhurst, 2006; Plumwood, 2005; Seddon, 1997).

In the latter part of the twentieth century gardening has become a growing industry (Probert, 2000) an industry that has left its mark as 'a conspicuous element in consumer society' (Seddon, 1997, 162). What are some of these consumable items that have contributed to the garden becoming a commodity? Nurseries and garden centres provide a vast range of gardening products from *chic garden furniture* to garden fairy lights to bags of pebbles to knee pads to a variety of gardening tools, all these items presented to the gardener to make gardening more accessible, convenient and easier. With the proliferation of easily propagated and replaceable hybrids, and the requisite fertilisers, pesticides, watering devices and other associated products to ensure immediate growth, health and vitality of these plants, plants themselves have become consumable items. Similarly the accessibility of 'mature' plant stock (large

amounts of inputs are required to grow plants, particularly trees to replicate specimens that are mature) to create instant gardens adds to the burden of resource depletion, by increasing consumption. Many of the available products, arguably deemed necessary for gardening, and the use of resources to acquire them, encourage waste (Hawkins, 2006; Seddon, 1997; Skolimowski, 1993) rather than practices of thrift, frugality, recycling and sharing. A visit to a nursery makes many seasoned gardeners (comments from interviewed research partners) wonder what gardening involves today. Less seasoned gardeners perceive these products as necessities to ease the tasks of gardening.

Barlow-Rogers (2001, 8) provides another insight into commodification: 'Design [of gardens] has been increasingly viewed as a commodity, a mere matter of consumer taste'. A perusal of 'The Yellow Pages'[33] bears witness to Barlow-Rogers' observation with the proliferation of garden designers, landscapers, and other professionals offering their gardening services. Statistics from the Nursery Gardening Industry of Australia (AGMM 1996/7, 2003, 2004, 2005) provide insights into the garden as commodity. These statistics include descriptions of a range of products and services available to the gardening consumer, the latest information on gardening trends and fashion, the influence of the media on gardening plus the dollar value of the Australian nursery and horticultural industry. From an economic perspective, for the year ending June 2003 (AGMM, 2003), $3.419 billion dollars in sales of 'greenlife' (all plants and turf) and allied gardening products (fertilisers, soil mixes, furniture, pots and irrigation materials) was reported.

[33] The Yellow Pages is an Australian telephone directory of businesses.

The commodification of gardening has also been assisted by the proliferation of media interest in gardening. While gardening magazines and books on the 'how' of gardening have graced bookshelves since at least the 1850s (Barrett, 1980; Burnie, 1996; Shum, 1940; Walling, 1944/1999), the involvement over the last twenty years of visual media has had an impact on the character of gardening in Australia. Whilst the media provided ready and welcome access to information on aspects of gardening, its impact may be seen as contributing to the garden as a commodity and object of consumption. The Nursery Gardening Industry of Australia (NGIA) confirms the direct marketing influence of the media when it states 'one of the major growth drivers of the industry is the media' (Australian Garden Market Monitor Report, June 2005).

Television shows with a focus on lifestyle, gardening and do-it-yourself projects have increased from the mid 1980s. One of the first gardening television shows was the Australian Broadcasting Commission (ABC) program 'Sow What' (ABC, 2005), with a very specific focus on gardens. The enthusiastic gardener Kevin Heinze was the iconic host (Edmonson, 2005) who presented this popular and pioneering gardening program from 1967 to 1988, after which time the ABC replaced it with 'Gardening Australia'. The new host Peter Cundall, took up a passionate, hands-on approach to gardening that mirrored Heinze's own, and the program has remained popular to the present day, its producers and crew staunchly focusing on gardening and, increasingly, on promoting the value of organic gardening. Channel Nine's 'Burke's Backyard' (Burke, 2005) commenced a few months (1987) prior to 'Gardening Australia'. However, reflecting the commercial channel's advertising requirements, its presenter Don Burke was entrepreneurial in his approach to gardening and focused on marketing and consumer tastes and demands. Initially the

show was garden-oriented, but quickly diversified to become a 'lifestyle' show. Axed in late 2004, Burke's Backyard was the progenitor for the evolution of other television gardening, lifestyle and 'make-over' shows (NGIA/AGMM, June 2003), that made their appearance on commercial television.

Assisted by vigorous marketing strategies from numerous businesses with vested interests in the sale of plants, products and horticultural goods and services (NGIA/AGMM, 2005), the high profile of celebrities responsible for the presentation of these shows contributed to their popularity. Yet since 2003 there has been 'a reduction in lifestyle media with support for these [lifestyle] shows easing' (AGMM, 2006). The reduction has been offset by changing consumer tastes and a large increase in readily accessible on-line gardening information (AGMM, 2003). The last three annual AGMM reports (2004, 2005, 2006), indicated that consumers are turning to the web to access garden information. The AGMM report for December 2006 states that 'Australian garden media landscape is changing as traditional media avenues continue to lose share to the internet… national forecasts indicating that online revenue will grow by 33 percent in 2007'. However the impact of media in its various forms has been and will continue to be an influence in shaping gardening ideas and practices.

This brief interlude has been presented as an introduction to exploring the significance, meanings, and attachments of gardeners to their gardens. It has prepared the ground for exploring gardening practices and research partners' views, responses to, and reaction against the garden being viewed as a commodity.

4 GARDEN ATTACHMENTS

In chapter one, I argued that the ecological impulse is the motivating premise for people to be involved with the Earth. The space of the local garden becomes the ground out of which tangible interactions between the human and more than human world occur. In chapter two, through review of the literature, I established stewardship as an ethical expression of the ecological impulse. The foundational premise of stewardship was caring for the Earth by engaging in behaviours that were responsible and ethically motivated. From this fundamental understanding of stewardship flowed a series of extended qualities of stewardship: mindfulness, immersion, reverence, love and compassion, and celebration. This composite of foundational and extended qualities is my understanding of stewardship *per se*. In chapter three I presented an overview and typology of 134 gardens in Hobart focusing on species composition and richness as a point of departure for examining gardeners' engagements with their gardens. Having provided a thumbnail sketch of the history of gardening in Australia in the Interlude, in this and the next chapter I argue that the gardening attitudes and practices of my research partners make real these composite qualities of stewardship as described. The work in these two chapters is important because:

> Gardens have special meaning: They are powerful settings for human life, transcending time, place and culture. They are mirrors of ourselves, reflections of sensual and personal experiences. By creating them or admiring them or dreaming of them we create our own idealised order of nature and culture.

> Gardens connect us to our collective and primeval pasts. Since the beginning of time we have expressed ourselves through the gardens we have made. They live on as records of private belief, and public values, good or bad (Francis & Hestor, 1990, 2).

The significance of gardens so described is reflected in the experiences of my research partners – experiences that touch upon childhood, parental and ethnic influences, gender, health, leisure and hobby, the urge to garden and connect with the more than human, aesthetics, self-expression, attachment and care, communion and spirituality, political discourse and critique. I take each of these in turn, noting that there are continual overlaps.

Many of my research partners were influenced by childhood experiences of gardens and landscapes and memories of familial and community involvement in these gardens. Experiences of the beauty and the ever changing face of the garden fill the child with awe and wonder. The child is fascinated, hungry to experience more, to delve into this new world of sensual stimulation beyond the confines of the house. Research partners reminisced about memories of these childhood experiences. Familial support, involvement and encouragement also left behind comforting and long lasting memories that became motivating influences for a child to garden. Memory was a powerful means of conveying a conscious engagement with the garden.

> *There was something there that captivated the imagination that created a connection with nature that we have now lost, but which we always seem to seek to retrieve. It is my childhood memories that help me to understand my connection with nature* (Pam).

> *Childhood was innocence and playing in the garden was an adventure – why have we lost that simple encounter with Nature? That is why I have encouraged my daughters from an early age to garden and become involved in creation. Let them take it into adulthood* (Susanne).

Merris reminisced about well-being in the garden, and the influence of her parents in this experience:

> *My memories of my parents' garden always evoked a sense of well being and calmness; there was something about the way my parents gardened that left an indelible mark on me… they loved the garden and all it represented.*

Memories of landscape as an influence and immersion into gardening was also mentioned by Jimmy: *Amongst other things, I miss breathing in the crisp air filled with scents of the parks and moors of Scotland… they rubbed off onto you, and your unique appreciation of nature translated itself in developing a particular love of gardening.*

Parental influence was marked by general comments and references to a productive aspect of gardening (food production and growing of cut flowers) as well as the more aesthetic pleasure of having a beautiful garden full of colours and scents. Jimmy reminisced about being in the garden with his parents:

> *My parents always gardened: they taught me to value the garden and nature as something special and now I realise what an inherent thing gardening is, and how crucial it is to my understanding of life.*

Raie retained a strong memory of her mother's influence and expressed it as a celebration: *My mother used to grow flowers for the church. Now the tradition continues and I have to always have flowers: in my home and to give away to others…it's celebrating their gift to us.* Similarly, Cliff recounted how *in England during the war, my parents had allotments where they grew food, both for themselves and for the war effort.* He continues the tradition of growing his own food. Hans had a comparable childhood experience remembering his parents *trying to grow food on their farm in Germany, amidst allied bombing… This was an absolute must if one wanted to survive.* He too continues the tradition.

The nurturing and loving influence of grandparents (cf. Pollan, 2002) involving their grandchildren in the garden was mentioned by Petra:

> *My uma and upa were great gardeners, allowing me to explore nature on the farm, teaching me everything I needed to know about gardening, insisting I pass on that love and commitment to my children, which is what I am doing.*

The passing on of gardening traditions from past to future generations is one of the key themes of stewardship: that of intergenerational equity. Vicki also spoke about the passing on of gardening traditions:

> *my grandfather showed me how to grow and care for fruit trees…I think it's because I liked climbing trees… it's such a delight being able to pick your own fresh fruit from the garden. Fruit trees in particular seem to epitomise the cycles of nature.*

Some research partners identified wider community influences in their love of gardening. Three research partners mentioned Will Fletcher[34] as having inspired them to pursue a native Tasmanian garden. Al stated that having a native garden was *an expression of ecological responsibility, and that in the long run I hope the local community here will also see the sense of having a native garden.* Keith also mentioned the influence of Peter Cundall[35] and of working in the soil with bare hands:

> *I loathed getting my hands dirty or smelling manure or having compost on my hands, yet when I saw Peter's enthusiasm for organic gardening, I became mesmerised. Now my hands are always in the soil.*

Very often childhood, familial and community influences and memories overlapped with ethnic influences. The sense and maintenance of cultural traditions and customs[36] was a common theme expressed by research partners. There was a reverential dimension to the garden that accompanied these ethnic traditions:

> *How sad it is that in Australia and other countries, we have lost interest in being self sufficient, working hard in the garden to create a sense of*

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[34] Will Fletcher is the owner of 'Plants of Tasmania', in the outer Hobart bush suburb of Ridgeway. It is one of two native plant nurseries in Tasmania specialising in native Tasmanian plants, as well as native plants from South Eastern Australia.

[35] Peter Cundall is the main presenter in the Australian Broadcasting Commission's *Gardening Australia* (see Interlude).

[36] The strong commitment to cultural and ethnic gardening traditions is investigated by Alanen (1990), when writing about immigrant gardens and by Giraud (1990), describing the Hmong people of Laos, continuing their gardening practices in California.

> *purpose to life – look at how many ethnic cultures are involved with the earth. It is only when we enter the struggle with the earth that we realise our own contingency and dependence on the earth* (Steffi).

Magda, of Polish extraction said:

> *for my parents gardening was more organic and natural (unlike today) and you could also go into the forest, pick mushrooms and berries to supplement what was growing in the garden: they taught me to appreciate the freshness and naturalness of having your own produce.*

Hans, whose father worked as a forester in Germany stated:

> *My father gave me the gift of gardening; he imbued me with an understanding of what gardens mean for people, how they contribute to our accepting the joy and anguish of life, with all its mystery. Gardening is a wheel, a continuous experience where we work with nature, and in doing so grow to understand it and respect it.*

The memory of cultural practices and parental influences also implied a gentle, spiritual connection with the earth:

> *My parents were Austrian peasants; there is something about your cultural roots that inspires you to have a deeper connection with the earth. You do gardening, because it's the natural thing. You do it quietly, you imbue it with your care… you become mesmerised… it's a spiritual encounter* (Philip).

Nikki, who spent her childhood and adolescent years in Papua New Guinea, reflected on how her parents took to the local culture's 'natural' gardening practices, and insisted she did too. Her description echoes a sense of mindfulness: *There was a consciousness associated with this type of gardening: being aware of not imposing and taking too much from the land knowing that it had to be treated gently and with respect*[37].

It would appear that research partners' ethnic backgrounds and traditions – particularly those from continental Europe – employed natural and organic gardening practices common before World War 11. In maintaining these practices they believed it was an important way of expressing their commitment to a caring and responsible relationship with the Earth.

Ethnicity also gains expression through research partners' values and decision to establish a 'native garden'[38]. Although ethnicity refers to people of similar cultural, linguistic or religious groups, the sense in which I use it here refers to an ecological perspective, of identifying natives within the Australian landscape. This is their indigenous environment, to which these plants are suited and within which they grow well. This is their identity, this is their nativeness and as such their ethnicity[39]. Some

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[37] Looking over transcripts and thematic analyses of interviews, the phrase 'treated gently and with respect', amongst others, occurs frequently.

[38] This native focus has been reflected in the efforts of Burley-Griffin in the 1920s in identifying the value of Australian native plantings (Bonyhady, 2000). It has also recently been written about by Brooke, 2003; Head and Muir, 2004 and Plumwood, 2005.

[39] Birrell (1987), observes that 'identification with and love of the land and its plants offers an enduring focus for national identity'. This sense of national identity I correlate with ethnicity.

research partners focused on the 'ethnicity' of these plants and their ability to thrive in these, their environmental conditions. Al stated that *the types of gardens and plants must reflect and be conducive to the conditions of this country.* This attitude reflected a sense of stewardship: responsible and mindful use of resources, an awareness of a sense of frugality in appreciating the scarcity of certain resources and of caring for the environment within which research partners had their gardens. Native gardens composed of hardy species are well adapted to Australia's harsh environment, require little water and nutrients, and are relatively easy to maintain. Research partners expressed their understanding and commitment to native gardens in various ways:

> *I do not understand why gardeners persist with exotic plants: many, apart from opportunistic invasive plants, do not thrive well in our environment, need lots of care and are rapacious of resources, especially water. Native plants know their environment: why don't we learn from them that you should only grow natives as they are best suited to these conditions* (Al).

These gardeners previously described as native purists (Plumwood, 2005) are keen to enshrine upon the landscape of Australian gardens the value and distinct benefits of growing indigenous plants. They argue about their commitment to natives and native gardens, and try to influence their neighbours. In defending his native garden against the perceived views of neighbours, Trevor stated:

Nativeness and nationality are also explored by Head & Muir, 2004; Morton & Smith, 1999 and Peretti, 1998.

> *I don't care if they don't like them. In turn I know they will realise the benefits of natives as opposed to exotics. I will keep feeding them little snippets about the value of growing natives in Australia. They have as much beauty as European plants, they are hardy, and they contribute to a greater awareness of conservation issues*.

Gender issues[40] and power relations in the garden, did not appear to be a major consideration amongst research partners as much as numerous other themes. What is notable however is that data from the 134 garden audits showed a proportion of 2:1 female to male gardeners (see chapter three) – contrary to the findings of Bhatti and Church (2000) who showed that the gender proportion of gardeners was 1:1. The proportion of female to male gardeners involved in gardening also contradicted Olechnowicz (1997, 208) who stated that 'gardening was man's work' and that 'certain parts of the garden were male preserves'. Interview responses from female research partners indicated that they were as much – if not more – engaged in gardening activities as their male counterparts. There was no suggestion from research partners that the garden was the sole domain of the male.

The issue of gender differences also overlaps with the influences of parents. These differences are presented in two ways. First, there were gender differences in the influence of parents upon research partners. Accounts of the female influence of parents (upon both female and male research partners) were often lengthy and passionate; there was sense of purpose and cohesion in the description of gardening;

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[40] For discussions on the role of gender in garden activity see, Bhatti and Church, 2000; Davidoff, 1995; Davidoff & Hall, 1987; Doolittle, 2004; Duruz, 1995; Gaynor *et al*., 2002; Holmes, 2000; Hoyles, 1991; Lochhead, 1987; Olechnowicz, 1997 and Thacker, 1979.

there was sense of being grounded in the garden, of loving involvement in it, and treating it with compassion. Emphasis was placed on mimicking the processes of nature, and *the responsibility of gardeners to tend the garden and look after nature* (Leonie). Bev, an avid 70 year old gardener, reflected on the distinct influence of her mother:

> *My mother, unlike my father, loved gardening and was passionate about it; from the age of four she taught me how to take geranium cuttings and propagate them; she inspired in me a great love of nature and the garden. There was softness in her tending the garden… she taught me to share my garden… In secondary school I used to grow vegetables and sell them to the teachers.*

Raie spoke of the great affection that her mother had for all the plants in the garden and how important it was look after nature. There was a deep reverence expressed in what she said: *Mum was a religious person who had this amazing sense of how we are all part of the picture and are responsible to look after God's creation… and we do it by looking after the plants in the garden… I sometimes think that my mother imbued me with a sense of gardening as a nurturing activity.*

References to the influence of male parents were not as numerous as those of female parents and/or grandparents. Apart from three, male parents' influences were described in less enthusiastic ways than those of female parents. The emphasis appeared to be more on the 'doing' in the garden than the 'being'. Descriptions were shorter, more directive, practical if not clinical, lacking in what appeared to be a special connection of the gardener to the garden. Notably there was a lack of the

engagement and the embodiment – immersion – of the gardener into the garden. Nigel recollected:

> *My father as a gardener influenced me from an early age. For some reason he was always focusing on pruning and weeding, cutting and sweeping. He would tell me: this is how you should do it. It seemed like chore, there was no real appreciation of the garden. It was just do, do and do, and never a sense of enjoyment.*

Alan, who described himself as a non-gardener, said *my father forced me to garden. It was a continual task, of doing things I didn't like… I couldn't just sit in the garden like a normal boy and poke around in the dirt… and since then I have despised gardening.*

Second, there was some gender delineation of roles in the garden and home, but these were only commented on by a few research partners. In keeping with observations by Bhatti and Church (2000, 192) where 'male respondents wished to control the garden as a place', Di observed that her husband loved *to cut and burn, and keep things under control.* However, she saw herself as *the carer of the garden overseeing all those 'delicate' processes of growth and nurturing.* The issue of [male] control was emphasised by Maggie who commented:

> *my husband has the veggie patch, neat with controlled rows, weed free. Pests controlled with sprays… whereas I prefer a garden doing its own thing, natural like the haphazardness of the bush. We have long debates about chemical usage in the garden.*

Raie distinguished her interests from those of her husband: *he has his woodwork, and I have my garden. I don't interfere with him and he leaves me to do my thing in the garden.* Similarly, Felicity stated that her husband *had control of the finances and cooking in the home… for me the garden is my sanctuary where I have some control and it brings order into my life.* Female gardeners involved themselves in all aspects of gardening: becoming absorbed into the careful growing of vegetables and flowers, of tending to the soil, weeding, and mulching (Duruz, 1995; Gaynor *et al*., 2002), using tillers and chain saws. Leonie, amongst other female research partners illustrated the overall interest and involvement of many females in gardening by stating:

> *I grow all plants… I love herbs, vegetables, perfumed and flowering plants, a mixture of both the practical and the aesthetic… I do everything in the garden… nothing is too much or too little… for some reason I love to sweep up the leaves.*

The 'restorative' and healthful qualities of gardens are widely described in the literature (Bhatti & Church, 2000, 2001, 2004; Kaplan, 1973, Kaplan & Kaplan, 1990; Lewis, 1990; Relf, 1992; Timms, 2000). Research partners shared similar such understandings and experiences of their gardens. For many the space of the garden and the craft of gardening was *a re-energising engagement with something that has been a part of what it means to be human* (Bill). The garden was a place to gain 'sanity control', a place of relaxation and of therapeutic value, an escape from the pressures of modern life and work, a place to 'be'.

> *I plunge myself into the garden and gardening… it is a remedy for the dysfunction of the world we live in, a world gone crazy. It is a salve, a*

> *reality check that makes me reflect on who I am and where my life is going. It slows me down, and makes me realise the importance of being connected to Gaia* (Mike).

Jasmine, whose health was failing, saw her garden as *a delightful, fertile, alive and productive, wild and rambling place* from which she gained both hope and strength to battle her illness. Her descriptions reminded me of that sense of celebrating the Earth as expressed by Hildegard of Bingen. Rachel told me that her (single-parent) relationship with her two girls was enriched by the garden: *by working in it and therefore working with nature promotes my sanity, health and well-being. It is relaxing and calming, a soothing experience enabling me to cope better as a mum.* Inspired to garden from a young age by her mother, Bev spoke about the rejuvenating power of the garden for an elderly person such as herself: *I can't go away for too long without missing it. I have to be in it. It is placatory, uplifting, energising… I actually feel younger in my garden.* Penny reflected on how *the garden enabled my husband to recover from a triple by-pass; having never been interested in gardening, he suddenly took it up with a vengeance.*

Literature attests to gardens being extended sites of leisure and relaxation. The Morgan Poll of 2001 (Roy Morgan Research Centre, 2001) identified 64% of Australians over the age of fourteen participated in gardening as a leisure activity. Franklin states that 'gardening has become one of the most significant leisure activities in the western world' (2002, 160). Many gardens are now considered to be outside rooms, devoted to entertaining and recreation (Askew & McGuirk, 2004; Bhatti and Church, 2000). The activity of gardening in itself was viewed by some research partners as a leisure activity, albeit one with an increasing focus on developing and maintaining lifestyle. Research partners recognised the leisure and

recreational aspects of gardening. A retired professional couple perceived leisure to be both working in the garden and enjoying and celebrating life in it.

> *We love working in the garden, observing all the changes occurring daily, it is a respite from work; we also love to entertain friends and family in the garden. The garden is leisure time and space in all aspects of our involvement in it… what can be more delightful than sipping a glass of champagne in it at the end of a day of having worked in it* (Chris and Colin).

Another gardening couple told me that they had redesigned their sizeable garden *for the purposes of recreation and entertaining, as well as to keep ourselves involved in the pleasurable activity of gardening. It is relaxation on two levels* (Mal and Ros).

Two research partners were critical of leisure as an aspect of people pursuing a lifestyle embedded in consumerism. These two wished to share their values about gardening as a link to the more than human, and an expression of frugality and humility. One of these research partners a self-described 'Marxist' suggested that:

> *leisure is an economic capitalist construct inspired by our preoccupation with work, materialism, money and lack of time… for me the garden is a special place, a memorial to nature and should not be a commodity to fit in with your lifestyle* (Mattie).

Nikki remarked that

> *gardening is not merely recreational and a leisure activity inspired by the latest media gimmicks… Gardening is a soul activity, a meditation*

upon the beauty of the earth and our place in it… it is the meek inheriting the Earth… It connects you with your origins.

For such research partners the connection between garden and Earth – whether forged in childhood, or through cultural and ethnic practices, or via investments in health and leisure, was relational. Bell (1996, np.) speaks of the garden as a starting point to reconnect with the Earth: 'people seeking to connect more closely with the land, nature and ourselves: what better place to begin than our gardens'. For many research partners their relationship with the garden was a way of being and living in the world. It was about caring, communing, cooperation, connection, co-creation, and touching the Earth. It was a relationship of mindful embodiment into the garden: an embodiment couched in love and compassion and reflecting a feeling of reverence. *I love and care for my garden as I would for a child. You can't help but feel this closeness to it. For me, the garden and nature are one* (Pat). Pat's reflection, continued to underscore the connection between the local garden and the greater garden of the Earth. It also highlighted foundational quality of stewardship as the sense of caring and nurturing for the Earth. Mary continued this theme of working in and caring for the garden when she stated that being *involved with nature's task of on-going creation, I realise that gardening is not gardening, it is caring for nature, being involved in its upkeep, maintaining a tradition that is thousands of years old.* Bill summarised this caring connection by reference to his profession as a teacher: *The garden is nature because it teaches you those things that nature practices: patience, humility, value of time, slowing down, change and compassion. It's what I did as a teacher trying to inculcate values of caring into the students.*

For many research partners the connection between garden and Earth had its source in what they termed *the urge to garden* or as *the most natural thing to do*. Brook

(2003), refers to the urge to garden as a need of humans to interact with plants, noting the role of plants in human well being. Freyfogle (2004, 995) intimates this urge when he describes the 'Lure of the Garden' in an article that juxtaposes conservation with a 'tend-the-garden' philosophy that appeared in the early 1990s. The *urge to garden* was a predominant theme that continually appeared in various understandings, attachments and engagement of research partners to their gardens. It was manifested in their gardening practices as described in chapter five. Through this theme the ecological impulse and its various manifestations were often present in research partners' descriptions of becoming embedded in the garden. Jasmine expressed this urge: *I feel drawn to it, I am aware of something pulling me in that direction… I'm not sure what it is, but it resides deep inside me.* Margaret echoed Jasmine by stating: *I'm not sure how it happened but it did and now the best experience for me is to have my hands soiled by the earth.* Willie was drawn to *the sensuousness of nature - colours, textures and plants in general, and before I knew it, I was a gardener.* Wilson's Biophilia hypothesis (1993) of the 'innate emotional affiliation' of human beings to other organisms', and Hildegard's notion of 'viriditas' (Sweet, 2006) as the 'sap connecting all of life' point to a similar kind of yearning on the part of humankind to connect with the more than human world. The 'innate emotional affiliation and responses towards other organisms' was a theme expressed and manifested by research partners in different ways and on numerous occasions. The theme was directed not only to a connection with plants, but also numerous other organisms that occupied the space of the garden particularly birds, animals and the micro-fauna found in the soil. It was also directed to the Earth, as the origin of all life, and within which there is this connective tissue, the 'sap' which binds all life.

Jimmy spoke about a love for all living things in the garden:

> *All plants are welcome in our garden… we encourage as much wildlife, animals, birds, lizards and frogs to feel welcome… the soil is as much a part of the life of the garden as is also the water running down the channels I have built.*

Hildegard's 'connecting sap' was echoed in some research partners' description of the relationship with the Earth through the garden: *It's like there is some form of connecting fluid that makes me want to be constantly reaching into the soil and experiencing what plants experience when they grow or flower* (Cynthia). Maggie added the comment that *I often feel there is some form of ancient continuing bond that connects me to the garden. Its like life is a continually flowing river and we are all caught up in it and want to experience it with others.*

Similarly Berry (1977, 86, 94) highlights the role of the soil as 'the great connector of our lives … without proper care for it we can have no community and no life'. Other research partners spoke of the experience of this affiliation with specific reference to the soil. They described the activity of 'feeling the earth', by submerging their hands in soil, as a way of putting them in contact with their origins. Bausch (1984, 32) recounts the story of an Iroquois Indian: 'feel the Earth… your feet are trying to teach you about [your connection to] the land… they will help you remember that experience'. For research partners this feeling the earth and soil was an experience of their groundedness in the garden. It was an experience of sharing the Earth, of 'earthiness'[41]. Krall (1990, 144) observes that 'the very dirt out there

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[41] Suzuki (1999, 78) describes this 'earthiness' as 'Earth, soil, dirt, ground, land, terms embracing ideas of profound complexity and that hidden within them is our sense of the origins, our place, our dependence on the soil beneath our feet'. Meister Eckhart (in Fox, 1980, 342) in the twelfth century

carries its own history and provides us with a sense of place'. This deeper sense of connection with the Earth was *a means of identification with a genetic trace memory, some form of an impulse* (Leonie). Susanne spoke about the historical sense of being involved with soil: *When I feel the soil on my hands, I feel at one with my origins… origins that are timeless.* Val described her bond with Earth through the garden as a mindful,

> *intrinsic affiliation, attraction, a need; it is such a joy to see things come into fruition, to observe and indulge in everything that happens: Mystery, death, resurrection and change, nature dictating what happens in the garden.*

Val's reference to *nature dictating what happens*, echoed Pollan's (2002, 207) observation that 'the gardener accepts contingency his own and natures'. Many research partners were aware of these contingencies; they also knew that their involvement in the garden will always be fraught with a lack of understanding of the various processes occurring within it and the greater garden of Earth. Whitehead (1920, 73) states that 'It is impossible to meditate on the mystery of the creative passage of Nature without an overwhelming emotion at the limitations of human intelligence' (1920, 73). In the garden the gardener is forced to admit this contingency of being human and learn the invaluable lessons of humility: 'the truly humble person is one in touch with the Earth (Mechtild in Woodruff, 1982, 16).

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spoke of 'being in touch with the earth', in touch with one's earthiness, and celebrating the blessing of our 'earthiness'.

Kathy also described this 'earthiness' as *the humbling experience of being able to immerse my hands into the soil and be co-productive with it, an experience millions of years old. It is an earthy experience.* Aged in her eighties, Gwen stated that it is hard for her to describe the experience of what happens in the garden: *All I know is that working in the garden, weeding and feeling the soil, watering the plants, growing vegetables [gives me] a sense of going back to a place where I have always been.*

In my reading, Gwen's reflections gesture to the idea that in the garden, gardeners learn and obtain wisdom from the Earth. Through this wisdom they develop a way of understanding the interactions and natural processes of the garden and implement practices that they perceive and experience as 'natural'. Some research partners told me that gardening provided them with a richer understanding of time. For many partners time as a linear construct was replaced by a cyclical one reflecting the seasons. I interpreted this dawning of a different sense of time as part of the wisdom of Earth inherited by gardeners from their observations and immersion into the garden. Bill suggested that *the garden creates a renewed meaning of time impacting upon our understanding of life… for nature time is cyclical and it expands our horizons of time.* The garden represents both the timelessness and cyclic temporality of the Earth (Abram, 1996; Tuan, 1974; Wilbur, 1983) in contrast to the speed at which modernity progresses (Weston, 1994). Kay felt trapped in our current understanding of time: *there is not enough time to garden due to modern life and lifestyle pressures… after working, doing all the chores, racing the kids around, there is little time for the garden… I long for a deeper understanding of time.* This observation was contrasted with Liz stating that *there is more than enough time: it's a matter of making it… there are 168 hours in a week and if you love gardening you*

will always be able to set aside time to do it. Commenting on the current preoccupation with immediacy and 'instant gardens', Peter observed that:

> *there is something about gardening that not only teaches you the true value of time, but that enables you to recognise and nurture time as a fundamental precept by which nature operates. Nature's patience in not hurrying what happens in the garden is a pleasing element of gardening for me. It also enables me to get off the treadmill and see it for the futile exercise that it is*

Part of what some called a 'genetic trace memory' (Berry, 1990) may be the impetus and recognition by gardeners to listen to and feel what 'the Earth' is saying, and then to incorporate it into gardening. When referring to gardening practices, many gardeners stated what to them seemed the obvious:

> *if you want a garden, to work in it and look after it you will get your ideas and inspiration from nature herself… look, listen, observe, feel, experiment if you have to… nature will always direct, even though she can be capricious* (Christine).

Elizabeth told me that *there is more to learn from observation and mimicking of nature's processes than could ever be conveyed through the tube* [television].

Susanne who also spoke of an affiliation with the Earth, added a different perspective about the urge to garden – her comment reflecting a foundational element of stewardship, that of intergenerational equity, and keeping the Earth for future generations. Bemoaning what she perceived to be a lack of involvement with gardening and learning from the Earth by children at school, she observed:

> *It makes me sad to think that we are so caught up in the technical and communication frenzy of this world, that we don't devote time to gardening with our children. This is their heritage. There is so much to be learnt from observing nature in the garden… I teach my own children at home because I believe I will give them grounding here about the earth and natural things that otherwise they won't get at school.*

Thomas Berry (1989, 3) made a similar observation when he stated:

> By gardening our children learn that they constitute with all living things a single community of life. They learn to nurture and be nurtured in a universe that is always precarious but ultimately benign. They learn profound reasons for the seasonal rituals of the great religious traditions.

Berry's observation, whilst appealing for children to become involved in gardening made sense of the ecological impulse as a desire to connect to the Earth and as a way of being *in* it. Berry's comment also paralleled Leopold's understanding of the biotic community as well as Macy's (1991) idea of a community or 'Council of beings'. Many of my research partners in their discussions about the garden confirmed that through gardening people and children have the opportunity to develop a relationship with this 'single community of life'.

Research partners who had lived in the country and on farms seemed more at ease speaking about 'the land', in the Leopoldian sense, and the influence the land had on their relationship with the particularity of the garden. For these research partners their involvement with the land brought with it insights about *learning from nature and how she toys with us* (John), experiences of contingency, of drought and famine, of kindness and munificence. John went on to say that *ploughing the soil gave you a*

sense of belonging to the land… you couldn't help but be part of it. Krall (1990, 144) also observes that being involved with the soil, 'cultivates in us a feeling of belonging and a connection to the land, its creatures, climate and to the neighbours and neighbourhood'. These research partners felt they had a deeper understanding of the relationships and interdependencies between the various life forms co-existing in the land. For them the experience of being on the land, of working with it, of producing crops and food, was their life. They were immersed in it on a daily basis. Discourses with them suggested a strong sense of 'earthiness' and humility, reverence and respect for the Earth. Familiar with Leopold's (1949/1989) land ethic and the writings of Berry (both Wendall and Thomas), Jackson and Thoreau, Bill stated:

> *You were there on the land, grounded in it, working with it, constantly growing things… there was a greater sub-conscious affinity with life in all its forms. Why should that affinity not be transferred to a suburban garden at least on a much smaller scale?*

Bill's reflection also connected with another expression of the ecological impulse, the sense of affiliation with other organisms as expressed in Wilson's biophilia hypothesis. Having grown up on an orchard in Western Australia, Petra remembered her experience of the land:

> *as a child I was always involved in everything that occurred on the farm… weeding between the trees, tending animals… I developed a sense of the 'land', it became a part of me, it infused me with a love of growing things, and having animals. Now I grow everything I want in my garden, my little patch of land, and I have chooks, ducks and rabbits.*

David, who was also raised on an orchard, told me that *having a garden brings the country into the suburbs and makes you feel closer to nature, as was the case in the country… the garden is a smaller version of the farm.* His reflection of the garden as a smaller version of the farm was another example of gardeners seeing their gardens as particularised, smaller manifestations of the greater garden of the Earth. Di, who had lived in the lee of Hobart's Mount Wellington since infancy spoke of the influence of country and bush life:

> *being close to the mountain and in continual touch with nature, the only natural thing was to have your own special garden blend in with the larger garden out there… the connection with the mountain, its moods, the bush, even the constantly changing weather ensured that I never lost touch with nature.*

Susanne told me that her relationship with the garden was symbolic of Gaia. Her description of that relationship, pointed to the garden as a microcosm of the Earth, and the Earth being manifested in the particularity of the garden:

> *creation like the garden has different layers; it is robust, it is the universe; it is like a book waiting to be opened, encouraging you to read and learn from it, to look at subtleties and details, to be enjoyed and savoured. Gaia is a holistic expression of the interconnection between people and the earth. The garden mimics Gaia, and Gaia is the garden as well.*

David and Nikki had a particular understanding and relationship with Gaia.

> *The garden is Gaia… it's where we experience the interactions of all that constitutes the Earth, living and nonliving, but on a smaller scale… we see it, feel it and observe it each day… we participate in it as well… we try to be conscious of it when we are working in the garden.*

For many research partners, engagement with the garden presented the possibility of personal expression and creativity. The creation and design of the garden, the growing of certain plants, and the practices in the garden were a mode for expressing their values and attitudes and perspectives on life, as well as their relationship with the Earth. Francis and Hestor (1990, 14) stated that 'personal expression is one of the prime delights of society'. The propensity for self-expression is made manifest in a range of human endeavours, including gardening. Barlow-Rogers (2001, 11), writes that 'the landscapes we create reveal a great deal about cultural values and the perennial exigencies of life'. The suburban garden created by the gardener was as much an expression of self as a reflection of cultural values. These expressions often conveyed various meanings research partners attributed to their gardens. Common among research partners were statements such as Steffi's:

> *my garden is not only an expression of myself, but an extension of who I am and everything I believe in and that which is valuable to me in life… in particular the integrity and health of the planet… if I look after the planet it will be there for my children.*

Steffi's comment highlighted a sense of reciprocity, of intergenerational equity and of enjoining with the Earth in a partnership[42]. That partnership emphasised an aspect of the relational ontology of stewardship, that of a gardener being entrusted to look after and care for the garden. The garden of the earth and every local individual garden is the moral subject for whom we care and to whom we are responsible.

Caring, as a sacred trust and part of the responsibility of being a steward was explained by Bill. *To be involved in the garden and look after creation is a humbling experience… we have been entrusted with this gift, a sacred trust, and the responsibility is overwhelming.* Similarly the sense of becoming enfolded into the garden was often identified as co-operation, co-creativity and even 'improving creation' (Wunderlich, 2000). Elizabeth, who is a Christian, added that *I see myself as cooperating with God in looking after creation.* Bill, one of five research partners who identified with stewardship, offered an expanded perspective: *We have a responsibility to improve creation especially if we believe we are stewards of it and have been entrusted with its care… it is a responsibility of grave proportions.*

Creativity and co-creativity highlighted the partnership between gardener and garden. There is reciprocity in this relationship: the gardener is involved in the continuing creation and upkeep of the garden and the garden (of Earth) responds with

[42] Somplatsky-Jarman *et al*. (2000), specifically explore the theme of partnership between humans and the environment. A similar theme is pursued in Macy (1991) when she speaks about a 'Council of beings'.

blessings and gifts of beauty[43], aesthetic appreciation, fruitfulness and sensual experience. These aesthetic and sensual gifts provide gardeners with a sense of pleasure (*eros*) and well being, and personal satisfaction knowing they have been involved in this co-creativity.

Many research partners expressed their attachment to and love for the garden by describing their experiences of beauty and sensual immersion in it. Susanne lyricised: *Beauty in the garden is Nature parading herself, displaying her voluptuousness through the diversity of colours, textures and scents of the plants… through their individual characteristics… how can you not fall in love with all this beauty.*

In a similar vein Pam told me that:

> *there is incredible beauty in the garden that only nature can provide… colours, scents, sight of flowers opening and closing their petals for the night; textures, sounds of birds, all contributing to something sublime, beyond what Man could ever dream to create… but we can help.*

Keith, a collector of bulbs, expressed his *love* of these plants, and how they affected him: *the colour, the shape, and the fragrance of lilies and daffodils is intoxicating. I want to get my hands on as many species as I can.* The senses were a key to such appreciation of beauty (Abram, 1996; Weston, 1994): *how can you not feel moved, filled with awe at the spectacle before you, relishing this sensual smorgasbord*

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[43] Since earliest times, gardens have been appreciated for their beauty. Often they were designed with the specific intention of emphasising beauty and creativity (Brown, 1999; Carroll, 2003; Hobhouse, 2002; Hoyles, 1991; Mc Greevy, 2000; Thacker, 1979).

(Raie). Duruz (1994, 202) found similar responses in her research with one of her respondents remarking that 'the cottage may be pretty, but the garden exceeds it as beautiful… flowers, shrubs, and trees assume significance not only for their visual attractiveness, but also for the emotional sustenance to drawn from them'.

For some research partners gardening as self-expression was described through artistic metaphors: *I see my garden as a way of expressing my creativity, of my entering the garden with a palette and painting a picture* (Peter). Elizabeth, a painter-gardener, observed that *the garden is a symbol of beauty… an opportunity to express my artistic streak by being creative in the garden. The garden evolves and flows like the strokes of an artist's brush.*

Creative expression can also have personal-political overtones in gardening. A sense of independence was highlighted by a research partner who saw his garden as *my creation, devoid of any externally imposed fashion, but also reflecting my decision to steer clear of conformism* (Philip). Mattie, my Marxist research partner told me that:

> *the garden enables me to practice frugality and simplicity… I believe in the non-acquisition of things… I recycle everything, collect plants and garden essentials from the Tip Shop*[44]*. I don't allow myself to become 'sucked in' by the consumer society we live in. My garden is very much an expression of my strong anti-feelings towards capitalism and materialism.*

[44] The Tip Shop is a retail outlet of one of three Hobart rubbish tips: Materials deemed of some resale value, are recycled and sold to members of the community.

Personal-political expression as it related to gardening was also evident among over half of my research partners, who identified themselves as 'real'[45] gardeners. Real gardeners were identified as those who worked in traditional, 'natural', responsible ways and were not drawn to gardening practices enunciated by the 'gurus' of modern gardening as defined by popular media shows. There was an understanding of the real gardener as someone who treats the Earth with care and respect, of being conscious of the relationship with and way of being in the garden. I interpreted these descriptions of a 'real' gardener as expressions of the qualities possessed and practised by a steward.

> *A real gardener is one who takes time and effort; who is not swayed by the latest cultivars or gimmicks, who works in with nature's ways and cycles, who avoids manipulating gardening by not using chemicals, who cares for the soil and the water and the plants* (Liz).

One of the questions asked of research partners was the amount of time and effort they dedicated to the garden. Many responded by taking me for a tour of their gardens and describing their practices and continual engagement with it. As has been discussed, research partners' understanding of time *as working in with the cycles of nature*, and not being swayed by a linear dimension of it, was perceived as fundamental to being a 'real' gardener. Similarly learning from the wisdom of the

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[45] Several Australian scholars refer to the notion of 'real' gardeners. Seddon (1997) refers to a 'freemasonry' of gardeners, a vague association or fellowship of gardeners (sometimes formalised through gardening clubs) who take gardening seriously and critically, recognising and accepting one another, recognising the garden as a place for sharing and exchange of ideas, skills and plants (Probert, 2000), and take responsibility for all their gardening activity.

Earth was a commonly expressed theme. Time, effort, commitment and learning from the Earth was evidence of research partners' care and love for their gardens.

For many research partners' their attachment to their gardens was articulated as a loving relationship. As the manifestation of the relational and emotional involvement of gardeners to their gardens (and to Earth) love is that element of being human which provides meaning to life (Fromm, 1963; Jampolsky, 1984, 1991; Maslow, 1970). Lewis (1983) refers to 'love of nature' as a serious and permanent human sentiment, an expression of relationship, and connection with the Earth. Research partners spoke freely about their love for the garden. Their descriptions of love of the garden were intimate, often reflecting the sort of relationship between people. A sense of *agape* was also evident in their descriptions of this love. These descriptions were intense, tangible and visible embodiments into the particularity of their gardens. *I am in love with my garden; I need it, it makes me feel great… it is essential and calming… I need it to be grounded… I would be lost without it* (Christine). Margaret stated that *my involvement in the garden is an involvement of love… it's as if my garden took on the characteristics of a lover, someone whom you've loved for an eternity.* Research partners by constantly iterating the connection of their gardens to the greater garden of the Earth, also spoke of their love of the Earth: *Nature is so kind, so unassuming, so undemanding: she showers you with gifts. I love her dancing through my garden* (Susanne). Cynthia added *that we are asked to love creation and the earth,* because it is good and filled with God's blessings. Elderly and on her own, Joyce told me that *the garden is an absolute necessity for me in my life. I miss my husband and the garden is a point of connection with him, and gives me greater purpose to life.* She added that her and her husband's mutual involvement in the garden *was a manifestation of the love we had for one another*.

Many observations of research partners hinted at a deeper, transcendent and spiritual way of being in the garden. Their experiences of the garden as a place of spiritual meaning and sustenance were often expressed as 'epiphanies' or 'peak experiences' (Maslow, 1972), as a *transcendence of feelings* (Philip), *of a connection with something beyond the comprehension of the human mind and senses* (Elizabeth), a harking back to the original *Garden of Eden* (Susanne), or a *connection to God and creation* (Cynthia). Fiona (and Mark) spoke of *the garden as an epiphany, providing me with divine experiences that are throat constricting, miraculous, moments filled with awe, beyond the realm of the human*. Inspired by mythical representations of the garden Susanne continued that *the garden and earth is Eros*[46]*: my love of life expressed through the garden which is my paradise; it is the 'Garden of Eden', it is a connection with my past.* Cynthia felt that in her garden there was a deeper connection with God:

> *My attachment is spiritual: the garden is not just here, but extends into the bush behind the block, and up the mountain, enveloping itself into the magnanimity of nature, into the arms of God's creation. My garden allows me to pray, meditate, promoting peacefulness and quietness in the soul.*

Jacqui and Philip told me that the garden is where *the miracle of life occurs on a daily basis, where the garden takes on mystical qualities and mimics the mystery of the universe.*

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[46] Mathew Fox (1983) describes *eros*, as a fundamental way of being involved in the earth: it is a passionate, sensual activity (cf. Weston, 1994; Hildegard in Uhlein, 1983), a celebration of the senses, that delights in the beauty and fecundity of the earth

Imbued with spiritual meaning the garden for many research partners was a sanctuary (Skolimowski, 1993), a place of solace and peace where gardeners reflected and meditated. Bill and Ruth told me that they started their days overlooking the garden *in prayerful and meditative mode… the garden is our number one priority in life… it is like a backpack, you take it with you everywhere… you depend on it, it depends on you.* In a similar vein David and Nikki, who perceived themselves as stewards, remarked that before they undertake any gardening activity, they meditated:

> *The garden inspires us to mediate on our lives… the garden is a spiritual place that manifests the mystery of the universe… we learn from it… before we venture into the garden to weed or plant or prune, we like to consciously think about what we are to do… it is, in a sense a spiritual exercise.*

Kathy, a self-confessed 'nature nut, described her experience of getting onto her knees and immersing herself into the soil up to the elbows:

> *Here we have ants and worms, beetles and larvae, slime and moulds… it is a submersion into a world of intricate linkages, of things we can't see, of a space that pulsates with life… it is a sublime experience that generates amazement and a sense of mystery… I'm not religious, and I can't really describe this experience… but it's sort of beyond me.*

Spirituality is a 'wakefulness', an elevation of the mind into a heightened sense of awareness; a delving into the deeper mysteries and intricacies of life, paradoxically often found in the ordinary experiences of life. Spirituality is an awareness of the subtle aspects of existence (Spretnak 1986), of focusing on the mundane and seeing

it as extraordinary. Some research partners associated the spiritual nature of their gardens with the presence of a creator God; other research partners, when speaking about the spiritual nature of the garden, pointed to the awareness of the immediacy and particularity of their gardens as a place where they experienced being awake to the Earth. This wakefulness was bond to the here and now, a visceral and tangible experience of interdependence with the more than human world; this wakefulness was an embodiment *in* the garden. Val's sense of the spiritual nature of the garden was an *awareness of the Earth as home and within which we have our roots* (Val). Research partners' daily experiences of the garden and gardening often encompassed a sense of the spiritual. Mattie stated that *merely being in the garden, doing things on a daily basis, looking at growth of plants and the busyness of ants was an experience that was hard to describe*. Through the practice of mindfulness, of coming to our senses (Weston, 1994), of reverence and love, the garden and Earth became a lived experience of something extraordinary, giving emphasis to stewardship as a spiritual quest and way of being. Philip often spoke about the spiritual nature of the garden:

> *here there is a connection with the mystery of the universe… a yearning to become more deeply involved in this earth and all those living things that constitute it… I get in touch with this world through the magic of just potting around in the garden.*

The deeper mysteries of the Earth, the beauty of the garden, and the craft of gardening become a celebration, a song of awe and joy, a dance between gardeners and that special place called the garden. Lynn, who was a ballroom dancer, told me that *when you realise that the garden is a sacred, welcoming, place, how can you not want to go dancing through it?*

In contradistinction to the qualities of the garden, the spiritual nature of the garden and the various manifestations of stewardship described above, the recent emergence of the garden as a commodity had given rise to many research partners critiquing this emergence. Leopold (1949/1989, viii) noted this commodification when he observed that 'We abuse the land because we regard it as a commodity that belongs to us', rather than something of which we are a part.

Consumption[47] and consumerism are realities of modernity, markers of the global spread of the capitalist market economy and of economic globalisation. Consumption goes beyond mass-produced goods; these goods as 'symbols conveying meaning' (Sack, 1988, 643) have political and ethical overtones. Speaking of the Australian case, Duruz (1995, 199) observes that 'the renewed focus on theories of consumption within cultural studies, has led to defining suburban gardens as commodities – as sites for negotiating style and identity, as goods to think with'. According to some of my research partners the commodification of and the consumptive values attributed to plants and gardening products in Australia contributed to *the trivialising of the meaning of gardens* (Maggie) and as such exacerbated current ecological problems. The role of the media and nurseries was also identified and criticised by research partners as being major contributor to this commodification of gardens. Research partners expressed both ambivalence and resistance towards the commodified character of Australian gardens, being troubled by it. As the garden is a part of the

[47] The question of consumption was brought to prominence in Veblen's (1899/2005) satirical exposé of modern capitalism, 'Conspicuous Consumption'. His comments are just as applicable today as they were a century ago. Further clarification of the role consumption in contemporary society, particularly in relation to understanding its impact on the commodification of gardens, may be drawn from Featherstone, 1990; Freyfogle, 1998b; Hobson, 2003a, 2003b; Sack, 1988 and Sagoff, 1998.

Earth, they also extended their discontent of the commodification of the Earth. Research partners perceived commodification as attitudes of abuse and not caring for the garden and the Earth – attitudes exemplified through behaviours that treated the Earth as object to be exploited for its human instrumental value. To many research partners, commodification of gardens and the Earth was an act of irreverence. In short, discussions with research partners focused on how the commodification of gardens adversely affected the pursuit and practice of responsible gardening. Many viewed commodification as antithetical to an ethical relationship with their gardens and garden of Earth.

Research partners reacted to various symptoms of the commodification of gardens. Passionate in her perception of the despoiling of Earth by people, Nikki, who had been described as a steward, summarised her objection to commodification:

> *it is a matter of style versus substance: and in these times the rupturing of the relationship with nature and the destruction of ecosystems, should be a clarion cry to the way we operate in the garden… it is crucial to the health of the planet. We should forgo image and status, and other symbols of commodification, and concentrate on ethically binding, responsible, behaviours towards the earth.*

Gayle, a 32 year old gardener, reflected on this changing character of gardens saying that

> *gardens as a new commodity are becoming a symbol of a newly evolving culture, marked by consumerism and materialism, and in doing so reflect a superficiality that is creeping into the meaning of gardens, taking away*

from traditional gardening, and suggesting irresponsible attitudes to the environment.

Raie, a gardener since the age of four, added:

It is a sad indictment of the world we live in that gardeners have been hoodwinked by the commercialisation of nature and gardens. Somehow "man" is sinking deeper into the mire of greed and consumption, lured by instant gratification and the pursuit of a fashionable garden image. These aspects undermine any sense of the real meaning that gardens have and our connection with nature.

David, for whom the garden was the living Gaia, stated that*:*

commodification focuses on gardens as a product that has to be continually improved by buying things. Almost as if one was buying happiness. How many new garden products or new plants do we really need? What is their purpose anyway? Is it a statement saying that I earn more money than someone else? Commodification takes away from the garden as a living entity.

Raie's observation, together with David and Nikki's, indicate a dislocation from the more than human world that is occurring in the garden as a result of the products and the glamour offered by commodification. Other research partners offered similar observations.

With her garden filled with flowers and vegetables, Bev lamented that

> *gardening has become the accumulation of a lot of faddish gardening products that traditional gardeners have no need of… and expensive containerised plants take away from the joy of sharing cuttings and seeds.*

Commodification was associated with wastefulness (Hawkins, 2006) and in opposition to values of frugality (Skolimowski, 1993). Research partners were aware of these wasteful attitudes: *Many garden products are not necessary, they are a depletion of already limited resources and ultimately they gather dust in the shed or are thrown out* (Peter). Penny added another perspective on wastefulness:

> *everything you need for your garden is within your reach; recycle, reuse, propagate, use your imagination, share with your neighbours; don't race out and buy the latest plant or gimmick. Resourcefulness in the garden diminishes wastefulness… in fact nature is never wasteful.*

Numerous research partners were concerned about how income[48] (and especially disposable income) had an impact on the character of the garden. Comments by research partners highlighted the complexity of views surrounding the role of income in gardening. This complexity was illustrated by views that were contradictory, even amongst those who saw themselves as 'real' gardeners. Some, like Keith and Maggie respectively, were unequivocal in their observations that *income influences gardening* and that *gardening values have changed because of the effect of the*

[48] The issue of the influence of income and socio-economic standing of gardens is complex. Some aspects of it are discussed by: Bhatti and Church, 2001, 2004; Duruz, 1995; Kirkpatrick, 2006 and Seddon, 1997.

dollar. A contrasting viewpoint was presented by some partners who identified themselves as 'real' gardeners. *It doesn't matter how much money you have or haven't, if you like gardening you will always have the garden that is you, without wanting to compare it to others* (Mal). Mary, familiar with Seddon's writings, also disregarded the issue of income: *regardless of income or status 'real' gardeners come together and share… especially those who care for what the garden means.*

Despite these contrasting views, for other research partners, income was an issue.

> *Sufficient income creates instant gardens: plastic gardens, often reflecting a social standing… socio-economic status determines what one grows in one's garden; if the house is substantial, so also must be the garden* (Christine).

Several research partners distinguished between the gardens of the wealthy and those of the not so well off:

> *Gardens of wealthier people are associated with tidiness, conformism, neatness and the ability to be selective in their range of plants – poorer people rely on veggie patches and fruit trees, and flowers as an added extra… but they love their gardens regardless of appearance* (Bev).

Vicki reflected how higher income disassociates a gardener's attachment to the garden. She felt that when someone else does your garden there is no sense of ownership through the gardener being embodied in the various processes of the garden.

> *Rich people pay others to do your garden, and there is no attachment; real gardeners and poorer people take pride in their gardens by working*

in them constantly; they have a long term commitment to the garden. To be a gardener you have to 'own' your garden by working in it yourself.

Some research partners perceived the garden as a symbol of class consciousness and associated it with idea of 'Keeping up with the Jones's'. Peter (amongst others) observed that *class consciousness and the garden as status symbols take away from the garden; they are a statement of the "yuppy rich" – the old adage of "keeping up with the Jones's"… since when has nature wanted to keep up with someone?*

A number of research partners saw the gardens of others as a fashion statement. Cynthia saw gardening (today):

as a fad – it is a fashion industry that titillates chic gardeners with its latest hybrid Kniphofia or Hellebore… some gardens are a greater fashion statement than a model walking down a cat walk.

Comical though this observation is, it does have a serious side to it. An American gardening magazine 'Making a Fashion Statement' compared the return of pastel colours in the clothing industry to 'motivating more than a few [plant] breeders to introduce similar colours into their plant lines' (Drotieff & Polanz, 2005). Nurseries cater to the fashion conscious in gardening by providing a 'smorgasbord' of 'in vogue' plants and fancy-named plant cultivars to capture the imagination, reflecting a certain 'snobbishness' concerned with outward appearance (Pollan, 2002; Timms, 2006) and adding a distinctive tone to a garden. *Agonis flexuosa* 'After Dark', *Petunia* 'Fame Electric Purple', *Canna* 'Tropicana', *Leucospermum* 'Tango' are just a few examples of plants with catchy and appealing names to tempt the fashion conscious gardener. Bill reflected on this preoccupation with fashion:

> *Gardens are styled along with moulded gimmicks. There is a pattern evolving… it's the fashion stakes: if you have this then you do that… if you don't do this then you are out of cinque… its all matter of being seen and doing the 'same' thing… political correctness, image, façade… and now there is too much sameness creeping in, and not enough differentiation.*

Leonie perceived a 'boring' homogeneity creeping into gardens:

> *Fashion or not, there is a sameness appearing in many gardens today, especially ones that have been made by landscapers. There is a repetition of plants, cultivars with fancy names and no one knows what they are… often there is no more than about half a dozen of the same plants: Myrtle, lavender, Iceberg roses, diosma, agapanthus and hebe.*

This homogeneity was identified by others as a depreciation of self-expression and creativity, and originality. *I grow plants that I like, and that contribute to the diversity of nature in my garden, and allow my creativity to flow… sameness is boring… I like to think that my garden is a result of my imagination* (Margaret).

Instant gardens, championed by some of the lifestyle shows, are also associated with commodification. Related to high disposable income, instant gardens reflected this homogeneity (cf. Probert, 2000), as well as status, fashion and image maintenance associated with desirable 'lifestyles'. Instant gardens and the *coterie of landscapers, mature plants, products, and practices* (Peter) used to create them, incurred the ire of many of research partners.

> *Getting a landscaper in to do your garden takes away from ownership and personal involvement. How can one possibly identify themselves as a gardener if they have not worked in and created the garden themselves* (Christine).

Val remarked that, *instant gardens are a point of detachment… associated with image. More often than not, it is ego-tripping.* For many research partners the mere idea of an 'instant' garden was at odds with the essence of a garden, and with *learning the lessons of nature* (Penny). Bill explained his aversion to the instant garden:

> *There is no such thing as an instant garden: look at the evolution of plants; look at how life on earth unfolded. Where's the mystery in it? It did not happen overnight – despite what the bible states. It took millions of years. In a similar vein the garden is an ongoing thing where you involve yourself with nature at every moment.*

Peter stated that it took him 30 years to develop his garden and it is still developing: *Part of being a gardener is being there, working, tilling the soil, planting, nurturing, observing. We start a garden but we never finish it. It continues long after we are dead.* Jimmy singled out the media (and nurseries) behind the creation of instant gardens.

> *Television panders to the instant… 'I want it now'… This sort of mentality typifies the world we live in now, the world of immediate results and speed. It is at odds with what the garden should be… it is at odds with gardeners working in with nature, in ways that are respecting of her and her cycles.*

Other research partners had more to say on the role of the media and nurseries. Willie remarked that *many television programs actually do a disservice to gardens and gardeners by presenting ideas which run counter to what are traditionally accepted practices*. Paul, reflecting on one of the popular gardening/lifestyle shows, summed up his perception of the media:

> *the problem with television media is they make up gardens which are unrealistic, instant, financially inaccessible to most people, high on resource wastage and, when eventually handed over to the owners, they fall into disrepair, and become unrecognisable as a garden.*

Some gardeners were forthright in stating that there was little in the shows that actually added to their gardening knowledge: if anything, they actually knew more about gardening than the presenters. According to Steffi, who had an organic garden and loved to grow herbs and vegetables.

> *I think I know more than the advice provided by these shows… what is presented is a waste of time, especially some of the entrepreneurial shows that focus on lifestyle, and instant gardens. Garden "make-overs" last a bit longer than the next television advertisement. I get so annoyed at this pretentiousness.*

Elizabeth's criticism went further by stating that garden and lifestyle shows were nothing more than *bimbo's turning it on… and personalities who know nothing about gardening or plants.* Lois singled out the presenter of 'Burke's Backyard', Don Burke, as lacking in integrity and understanding of gardens:

> *Don Burke is an entrepreneur, a media personality, conscious of status, visually perfect but bland and lacking in passion for gardening… a showman more concerned with a current fad or fashion, biased in what he likes, committed to selling a certain product. He knows little about real gardening.*

A more conciliatory note was made by Al: *It is a matter of distinguishing between what is and isn't of value (on television): you are the gardener, and you know*.

Mattie made the connection between nurseries and the media: *The media and nurseries collude together, with their motive being nothing more than profit margins. They assist one another in this venture.* Cliff, an 'organic' gardener, questioned the motivations of the nursery industry:

> *Nurseries, and the horticultural industry are no different to any other big business; there is degradation of (a) resource base; there is production wastage; there is consumer exploitation… (they) are not really interested in gardens or plants: the bottom line is the profit motive… and unfortunately they are involved with selling of (garden)chemicals detrimental to the earth.*

Pat, a retired female nursery owner compared nurseries of today with traditional nurseries of some years ago. She felt that the traditional nursery person respected and cared for the plants in the nursery:

> *I don't deny the value of nurseries and the service they provide. But today's nurseries – if you can call them that – are not people or plant centred; there is little care and nurturing of plants by the nursery*

> *people… if you do find an old fashioned nursery, you can see the nurseryman* [sic] *truly cares about his plants, loves them has a sense of commitment to them and is even loathe to sell them.*

Research partners singled out the apparent lack of respect, love for and understanding of a relationship with plants. Looking after and tending them individually was a commitment that many recognised as being fundamental to being gardener, and exercising responsibility. Continual availability of plants did not mean that they could be allowed to die because of a lack of care. This instrumental view of plants took away from the ethical relationship gardeners had with plants. Leonie observed that:

> *even though you can get any plants you want at any time of the year, too often people plant them out of season, and they die… they go back and get more, without proper horticultural advice, and the circle continues, with the winner being the nursery which continually makes money at the expense of the (uninitiated) gardener.*

Some gardeners singled out hybridisation along with the development of new cultivars as money making ventures. The few research partners who expressed concern over hybridisation underscored a sense of conserving and protecting these plants as entities with whom they had an ethical relationship. Jimmy observed that *hybridisation is just another way that nurseries make more money, and unfortunately disregards the intrinsic value of plants.* Pat, with an interest in 'original and heritage' plants stated that:

> *the introduction of so many cultivars and their fancy naming was an insult to my commitment to and understanding of the botanical names of*

plants. It also highlighted the superficial nature of popular gardening in Australia.

Tom admitted that *at times cultivars are developed to suit certain conditions… but often they seem to have a tendency to die… people go back and get more and they die…that is wastefulness and unfortunately profit for garden centres.* Kathy also expressed fear over the genetic modification of plants: *in time there may only be remnants of non-GM plants: how will this affect the cry to maintain biodiversity?* Jimmy questioned the development of Plant Varietal Rights and Plant Breeders Rights[49] as a means to protect further propagation of cultivar, as unethical.

A frightening scenario is the decrease in varieties and original stock due to increase in cultivars and GM plants. Where do we go when we can no longer propagate because of PVB laws? And what about the rights of plants[50] themselves?

The consumption associated with some gardens has been identified as having a deleterious effect on the environment (Bhatti & Church, 2001; Hobson, 2003b; Franklin, 2002; Seddon, 1997). Research partners also identified the deleterious affect of the commodification of gardens towards a worsening global ecological crisis. The problem of the exploitation of resources and use of chemicals was

[49] For information regarding PVRs and PBRs, see Llewelyn, 1997; Plant Haven, 2006; Rimmer, 2003; UPOV, 2002.

[50] The comment on the 'rights of plants' draws on the debate surrounding the intrinsic rights of other species. For further details see *inter alia*: Callicott, 1997; Devall & Sessions, 1985; Kellert, 1993; Knuth & Siemer, 2004; Naess, 1989; Nash, 2000 and Stone, 1974.

exemplified by Gwen observing that *some gardens are too artificial and wasteful of resources… how can caring for your garden allow you to use chemicals?*

A strong element of criticism was directed towards the chemical industries influence in horticulture, duping gardeners into using chemicals, synthetic fertilisers and a range of pesticides and herbicides. Lois reflecting on her neighbour's use of chemicals (and her eventually having to give up growing vegetables because of chemical seepage in the soil) told me that:

> *gardens need to adopt natural processes and not rely on artificial means of creating and sustaining a garden using chemicals, consumerable items, and products that are wasteful and contribute to a poisoning of the soil in the garden… the horticultural industry is giving us the wrong message.*

Bill bemoaned what was happening in some gardens. His comment reflected the continued links research partners made between garden and the Earth.

> *the garden is a mirror of what is occurring around us on a global scale: exploitation, wastefulness, pollution, soil damage, introduction of invasive species… it is reprehensible what is being promoted through various avenues like the media and nurseries. Somehow it's not gardening but exploitation of an already fragile earth.*

Despite many research partners recognising the long term deleterious effects of commodification and its various manifestations, some were ambivalent about its impact. Petra added an appeasing note to the discussion on commodification observing that:

> *despite the preoccupation of the media and the making of the garden into a commodity, the last 20 years had also influenced people into having gardens and perhaps attributing more value to the role of the garden in a hectic lifestyle.*

Many research partners were impressed with 'Gardening Australia', and its focus on 'real' and 'organic' gardening. The passion and earthiness and knowledge of its main presenter, Peter Cundall was singled out as inspirational and as meriting positive comments about the role of the media. *Peter Cundall knows what he is talking about, does not mind getting his hands dirty; is an enthusiastic gardener who encourages people to get involved in gardening* (Christine). Steffi admired Cundall's employment of traditional and well tried methods of gardening that were not deleterious to the Earth:

> *He has done so much for gardening in Australia: he is not caught up in the latest fads, encourages organic and natural gardening, and looks at prolonging the life of plants and the garden. His passion is infectious.*

This lengthy critique by research partners of commodification with its various manifestations and influences indicated the concern my research partners had towards the manner in which the garden was being identified as an object and commodity. It was also a critique which illustrated a breadth of understanding amongst research partners of gardens and their role in the lives of humans. It was a critique that lamented a separation from the more than human world. But it was also a critique whose power was expressed in research partners wishing to energise other gardeners into an ethical relationship with the Earth. This power was expressed by

research partners engaging in practices that made real the sense of stewardship within their gardens.

Research partners in expressing their attachments to their gardens evidenced, explicitly and implicitly, the ecological impulse, and the foundational and extended qualities of stewardship. Personal insights by research partners added extra dimensions to my understanding and development of stewardship, as well as highlighting the complexity of stewardship. This complexity refers to the various understandings, expressions and practices of stewardship by them in their gardens. Their reflections and insights about the garden (of the Earth) and the craft of gardening emphasised the extent to which gardens continue to play a major role in people's lives today. Their attitudes also hinted at a tendency to maintain and continue a relationship with the garden as a way of being on the Earth.

5 GARDEN PRACTICES

In the last chapter I argued that foundational and extended qualities of stewardship were articulated through the values and attitudes my research partners expressed in relation to their gardens. In this chapter, I develop this argument further by investigating how the aspirations and assertions of research partners are expressed and formed in and through practices[51]. I then go on to demonstrate how these practices manifest themselves in relation to those foundational and extended qualities of stewardship. Noteworthy in many research partners' descriptions and reflections of their gardening practices are references to their gardens as microcosms of the Earth. Engagements with the particularity of the garden mirror engagements with the larger garden of Earth.

Gardening is a craft – a craft expressed through the range of practices gardeners employ in developing their gardens, practices with antecedent beliefs and values. This craft is the lived experience, the immersion of gardeners in their gardens (Weston, 1994). It is 'participation and connectedness… an investment of time, effort… and the human spirit into the garden' (Lewis, 1990, 246-247). When speaking about this craft, the focus is on gardeners, 'being in the garden and

[51] Little information exists about specific research into gardening practices. What research exists is contextualised, tangential to a particular focus on gardening, and anecdotal. Scholars that mention practices in one way or another include: Bhatti & Church, 2001, 2004; Brook, 2003; Duruz, 1995; Giraud, 1990; Head & Muir, 2004, Head *et al*., 2004; Mullins & Kynaston, 2000; Plumwood, 2005; Pollan, 2002; Relf, 1992; Seddon, 1997 and Taylor *et al*., 2005.

surrounded by it, as well as the simultaneous engagement of the senses' (Cooper, 2003, 105). Practices in the garden are a lived experience and a way of being.

In describing qualitative research, Denzin and Lincoln (2000, 8) write of 'the world of lived experience' a world reflecting 'the intimate relationship between the researcher and what is studied'. Qualitative research broadens the classical understanding of method, and places the researcher into collaborative equal participation with the subjects of the research (Angrosino & Mays de Perez, 2000; Fuller, 1999; Patton, 2002; Spradley, 1979). I have been a gardener and taught horticulture for many years. The garden has been to my world of lived experience; it has seen me develop personal relationships with the various gardens I have had and others that I have designed and worked in. Being gardener on a local suburban level has also seen my immersion into the greater garden of Earth. My understanding of the suburban garden has, for a long time, been a timeless and seamless connection to the greater garden of the Earth. Within the garden my hands are scoured with the soil of my endeavours, but that scouring has been a pleasant, humbling and awe-inspiring experience. It has been an experience that has also made me aware of how much more there is to know and experience of gardens and the Earth. My involvement with research partners was a mutual sharing of this lived experience of the garden. The garden was the link, the context and focus of interaction (Angrosino & Mays de Perez, 2000) between myself and my research partners. The interaction with research partners also pointed to an interaction with the greater garden of the Earth.

I also correlate that world of lived experience with the notion of being a 'real' gardener. The self-identification by many research partners as 'real' gardeners participating in the fellowship of gardening (see chapter four) and engaged in its craft, indicate a particular way of experiencing the garden, through various

understandings and practices. ‘Real’ gardeners who have embodied themselves in the world of the soil and plants, say they *know* what the garden is, how it functions, what is best for it, and how it responds to care and attentiveness. They have a *feel* for the garden; they are able to distinguish between, for example *practices that are ‘natural’* and that reflect a respectful and responsible attitude for the health of the Earth, and those that may cause damage to the Earth. This ‘knowing’ and ‘feeling’ expressed by research partners is difficult to explain. Ingrid, a gardener of many years and a trained horticulturalist who has been involved in organic practices told me that this ‘feeling and knowing’ *is something that can only be experienced by those whose relationship with the garden is being buried into the space and life of it… it is total commitment and love for the garden.* Gwen, who has gardened for over of 60 years said that *gardeners just know.*

Participant observation arose from my world of lived experience of the Earth: of being a gardener, a horticulturalist, a bush walker. Participant observation was one of two methods used to identify, describe and analyse gardening practices of my research partners. Whilst the interviews were the core of my research and findings, participant observation was supplementary. Participant observation with research partners was exemplified through experiencing their gardens, ongoing discussions about experiences of the garden and their responses to my specific questions about their gardening practices. It involved ‘a conscious and systematic sharing in the life activities and, on occasion, in the interests… of a group of persons’ (Jackson, 1983, 39), in this case my research partners. Participant observation involved, at times, lengthy meanderings through the gardens of my research partners, observing (and noting) plants, garden layouts, structures and in particular evidence of practices that required critical reflection. ‘My observations [were] transformed into self-conscious,

effective and ethically sound practice(s)' (Kearns, 2000, 104) of identifying the gardening practices of my research partners. Observations also included initial glimpses of certain aspects of gardens, to later longer passive observations, to casual comments about the garden which elicited continual responses from partners, to active and overt participation (cf. Hammersley & Atkinson 1995), which sometimes involved joint discussions on gardening and horticultural practices and the attitudes that underlying these practices.

In answering the question 'what are your gardening practices?' research partners provided lists of practices and lengthy, sometimes rambling descriptions and demonstrations of their activities and tasks in the garden. Within these descriptions they explained why they engaged in these practices, what these practices meant to them, where they acquired them and the significance of these practices to encourage a greater consciousness of the ethical relationship of the gardener to the garden (of Earth). Their lengthy descriptions of practices validated my observations of their practices and substantiated the practices listed in Table 5.1.

Many of these gardening practices listed in Table 5.1 might best be described as general or common practices – pruning, mulching or weeding, for example. Other less common practices, specific and perhaps less identifiable, have also been included, among them propagation, deciduous leaf collection, or vermiculture. A feature of both common and less common categories of garden practices was the ability of my research partners to extract and extrapolate minute details of how they applied these practices. As an example, Kathy's listed practices included:

> *mulching, use of newspaper and carpet, pruning, weeding, propagating, potting on, seed collection, dead-heading, major composting, plant selection,*

vermiculture, manure collection and application, soil amelioration, discrete watering, lawn decrease, organics, observation and learning.

Cliff, a retiree, influenced by Mollison's (1994) permacultural practices, stated:

> *I spend everyday in the garden and I could give you a great long list of everything I do in there, but we might be here till nightfall. There are so many things that involve me in the garden… my work in the garden is all-consuming… my practices are organic, permacultural and I believe they reflect an attitude of caring for the earth.*

Table 5.1 Gardeners' Practices

No.	Practice	Freq. (N = 67)
1.	MULCHING	
	General mulching	52
	Straw use	14
	Grass clippings collected/mulched	11
	Collection of deciduous leaves/mulching	10
	Seaweed use	10
	Pea straw use	9
	Pine bark mulch	4
2.	COMPOST	
	General composting	43
	Re-usage/recycling all materials	21
	Pruning reused/composted	14
	Veggie scraps composted	6
3.	WATERING PRACTICES	
	Water consciousness	42
	Dripper systems	6
	Water tanks	5
	Grey water recycling	5
	Water unconscious	*3*
4.	SOIL PRACTICES	
	Soil improvement – addition of organic matter	23
	Gypsum added to clayey soil	4
	Mushroom compost added	4
	Careful cultivation/aeration of soil	2
	Soil sieved to remove weeds/gravel	3
5.	ORGANIC FERTILISERS/MANURES	
	Unspecified manure usage	19
	Vermiculture	10
	Blood and bone application	9
	Owning chickens as manure source	6
	Use of chicken manure	5
	Use of horse manure	4
	Use of dynamic lifter	4
	Use of sheep manure	3
	Comfrey grown as green manure	3
6.	'ORGANIC/NATURAL' PRACTICES	
	Non-chemical usage	41
	Organic/natural practices employed (including permaculture)	39
	Practices adapted from observation of nature	26
	Mindfulness practised	15
	'Earth friendly' practices	14

No.	Practice	Freq.
7.	PROPAGATION TECHNIQUES	
	Sharing of plants and cuttings	17
	Propagation techniques unspecified	17
	Sourcing of plants not from nursery	10
	Propagating from own cuttings	7
	Own seed collection	5
	Encouragement of self-sowing	5
8.	GENERAL CULTURAL PRACTICES	
	Weeding	34
	Pruning	30
	Reduction of maintenance	14
	Natural pest control	13
	Crop rotation (flowers and veggies)	9
	Tip pruning/dead heading	6
	Companion planting	6
	Weed suppressant materials used	5
	Potting around	5
	No dig garden	3
	Growing ground cover as weed suppressant	3
	Keeping garden tidy/sweeping/raking leaves	3
	Plastic bottle glass houses	2
	Swales	2
	Spacing of plantings	2
9.	PLANT SELECTION/PREFERENCES	
	Awareness of/removal of IES	18
	Eclectic species mix	17
	Avifaunal attractant plants	17
	Growing of/preference for natives	16
	Environmental suitability/ selection of plants	16
	Incorporating natives with exotics	9
	Growing of flowers for aesthetics	8
	Preference for exotics over natives	7
	Removal of exotics	6
10.	PRODUCTION PRACTICES	
	Growing vegetables	36
	Growing fruit trees	19
	Harvesting	9
	Chickens for eggs	6
	Bee-keeping	3

No.	Practice	Freq.
11.	LAWNS	
	Not looking after lawn	24
	Not having a lawn by choice	13
	Lawn care (fertilising and watering)	9
	Decreasing size of lawn to conserve	7
	Maintaining a marsupial lawn	4
	Mowing of lawn	1
12.	CHEMICAL USAGE	
	Weed spraying	7
	Chemical pest control	5
	Fertilising with chemicals	3

The gardening practices of my research partners was evidence of the lived and conscious experience of those values and attitudes discussed in the previous chapter. Susanne encapsulated this idea:

> *What I do in my garden arises out of my belief that we are one with nature and the Earth… my link to nature (in the garden) is interdependency, a relationship of love and awe… I believe my practices reflect my caring for nature. Gardening is not gardening, it is caring for nature and the earth… the garden is a microcosm of nature.*

Joe simply stated: *My practices are in keeping with natural processes… they are an act of consciousness-raising, of my caring for the Earth… ensuring biodiversity.* Along this theme Leonie added*: The garden is a connection to nature… it is the interconnection of all species… I would hope my practices respect the interconnection between the animals and plants in the garden.* Kathy, the self-confessed 'nature nut' was convinced that:

> *in the garden (there is) an intrinsic affiliation to be involved with other species. I can't be a gardener if there is no connection with the natural world… I invite frogs and birds and all other animals… I care for my plants in ways that do not damage the ecosystem that my garden is. I want there to be a balance between what I do and how it affects all the living things, including the soil… everything in my garden is interconnected… my practices are wholly organic out of respect for these connections.*

Visiting Kathy's garden I was struck by the way her description of practices resonated with Leopoldian ideas of the integrity of ecosystems, as well as perceiving humans as co-citizens with other organisms. Her references to balance, to interconnections, to not damaging her garden ecosystem, to her connection with it, to doing the 'right' thing, underscored the ethical nature of her relationship with the garden. Her reference to the *intrinsic affiliation with other species* also resonated with Wilson's biophilia hypothesis, though when asked, she was not familiar with biophilia.

Bill, a retired teacher (of English and history) and conservationist was familiar with Leopold:

> *The land ethic calls upon us to treat the land with care and dignity, mindful of all the elements that constitute that land, and maintaining its integrity. There is a grave responsibility here: it behoves me to treat the land respectfully… that is why for many years now my (garden) practices have been 'organic and natural'… it's a matter of living in*

harmony with the land. Its also part of my Christian practice of caring for creation.

Mark, a geomorphologist had a comprehensive understanding of Gaia, and grounded his gardening practices in that theory:

nature is biodiversity and geodiversity… it is robust… it has different layers that interact with one another… gardening for me in an inner urge, pointing to a relationship with the Earth that requires practices respectful of the dynamism of Gaia… in my practices I am conscious of how they affect the dynamics of the garden: organic and inorganic.

The ecological impulse, the urge to relate to the more than human world was foundational research partners' implementing their gardening practices. When they spoke about their gardens, consciously or otherwise they repeatedly referred to the greater garden of the Earth. The garden which enfolds itself into the Earth sees the Earth enfolding itself into the garden. Many of the practices described pointed to the foundational and extended qualities stewardship. Foundational qualities, of caring, respecting and acting responsibly, were expressed through gardening practices in numerous ways. Elizabeth, for example, stated that:

God made the world and told us not to abuse creation, but to care for it and look after it. In the same way I care for my garden by working in it and doing those things that keep it healthy and alive. I do not use chemicals or indulge in its commodification. I get down on my knees and sift the soil… I cut [prune] *the plants carefully knowing that they will respond to my care…I regard them as gift.*

Philip declared that:

> *caring for something means a responsibility… having a garden is like having children: you tend to their needs, you care for them, nurture them and make them happy. It is the same with the garden… I am a care-taker, I have a moral obligation to engage in caring practices that respect and co-operate with the nature… I want to see happy plants.*

Margaret reflected on the contributions of traditional gardening practices by other cultures[52] and how these practices highlighted a caring involvement with the Earth:

> *Ethnic diversity actually contributes to effective gardening techniques, ones that inspire organic processes that are part of (these peoples') understanding of caring for their gardens and the Earth. I remember my Italian neighbours in Melbourne… always working in the garden, digging and planting, harvesting… it was hard manual work… they had a way of doing things that taught me about natural gardening practices.*

For Hans, from his German upbringing on a farm in Bavaria, the garden was alive:

> *my garden is a living thing therefore I need to care for it… I compost, raise worms, mulch, use manures, add organic material to improve the soil, all those natural things… it is the same with pest control: yes (pests) are a nuisance but they have as much right to be in the garden*

[52] A number of scholars have also highlighted the positive contributions made to gardening by ethnic cultures: see Alanen, 1990; Bhatti & Church, 2001; Gaynor, 2006; Giraud, 1990; Head *et al*., 2004 and Timms, 2006.

as I do… I use water to get rid of aphids, I have chooks… its all to do with my culture and upbringing… nature and working with it is a part of my life.

Nikki reflected on being brought up in Papua New Guinea:

these [native] *people have a connection with the Earth… it is their life… their food gardens are the Earth… their life in the jungle focuses on not spoiling or abusing it, but maintaining its health, diversity and productivity…I have incorporated that same attitude into my garden… and my practices are natural and value the Earth as a living thing. It's a matter of care… Chemicals upset the balance, over cultivation of soil destroys its structure, mulching makes the soil alive.*

Jimmy summarised the motivation behind his caring practices:

Gardening is a conscious interplay with nature… what I do – or I hope I do - in my garden is what nature does. I engage in practices that mimic nature's resourcefulness, its cycles, its wisdom, its sense of balance… it is very much a conscious activity that expresses care and respect for its ways… people laugh at me when I show them my blackbird twig fences. But for me, I care for the plants as much as for the animals.

Research partners consciously implemented practices with the view to acting responsibly in the garden. This consciousness was a mindful way of engaging with their gardens, of being present to individual tasks, whilst at the same time recognising and being aware of the interdependences and interconnections between

the living things in the garden. Fifteen gardeners spoke of mindfulness specifically as a practice of becoming absorbed into the living space of the garden. A further 26 spoke of *learning from and observing nature*, which in itself is also a practice of mindfulness. For these research partners *learning from nature* required consciousness and a deliberate choice to become (sensually) immersed into the garden. Kathy, a committed organic gardener spoke of the awareness of being immersed in the garden:

> *As a gardener I need to be aware of what is happening in the garden. I observe nature and the season… I select plants and put them in places where they will be happy: the garden has so many micro ecosystems…its all observation and learning… I use a lot of straw in my garden… in nature there is always a layer of mulch or litter… For me, it's a matter of commitment and keeping in tune with nature: then I know my plants are happy, and I am doing my bit to keep nature happy.*

For Liz,

> *the garden is an extension of nature; it is a living thing, and I need to develop a feel for it… so I investigate every nook and cranny, I know every square inch of it… and as such my (organic) practices are ones that nurture the life of the garden… it needs to evolve into perpetuity… it is an investment in the future… gardening is a conscious practice maintaining a piece of the earth for our children.*

Steffi, a research partner who considered herself to be an environmental activist, had a heightened awareness of *being one with the Earth*. This awareness was translated into her involvement with recent (Tasmanian state

and local) environmental issues and made her more determined to stop the abuse of the Earth. In my discussions with her there were constant references to the ecological crisis, and how we need to respond to it.

> *That is why I want to get more people angry about Earth issues… why I am committed to organics and stewardship in my garden. I start here with my practices and it influences my friends. It is a conscious thing I do, that will ripple out and affect others.*

During the course of the interviews and exploration of practices, a number of research partners expressed anger over numerous issues. Apart from a generalised anger (as evidenced by Steffi) about the 'ecological crisis', and its various manifestations, some research partners reacted angrily about commodification of gardens. They perceived commodification as contributing to the crisis. For example Nikki stated that

> *I get angry… my gardening practices are counter-cultural, and in direct opposition to treating the garden and the Earth as a commodity… my practices are respectful of my relationship with the garden as something to be treated with love and dignity.*

Some research partners spoke of being mindful in the employment of specific practices some of which pointed to a sense of responsibility and frugality, and also highlighted the need to conserve resources: *I always underwater the garden… in these times of water problems, I am mindful of the value of water… plants can still be healthy if they are trained to live on less water… mulching helps as well.* (Penny).

Joe was mindful of the water situation as well:

> *I have developed my garden in a harsh environment with specific plants that are water efficient: Mediterranean and native… I have installed trickle feed and dripper systems, as these feed directly under the plants and to the roots, and there is less wastage.*

Tom, a teacher who espoused 'sustainable' living said:

> *I learn from nature here: all my practices are a conscious reflection of what nature does… I share a bio-pit that decomposes everything; I mulch, I have worms, I recycle my grey water, I recycle my household rubbish and cut down on wastefulness… It's all to do with reducing the ecological footprint*[53] *in my garden. It's to do with being responsible.*

For some gardeners mulching and composting were fundamental gardening practices; practices that were traditional, time honoured, and reflected a caring attitude, one that made sense of the foundational qualities of stewardship:

> *Composting is the most natural process of nature. She decomposes everything… its cyclical… it's a natural way of caring. I become fascinated by the speed at which (my) decomposition occurs… little organisms doing their bit… its marvellous to see how nature operates in my garden* (Willie).

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[53] Tom was familiar with the concept of the 'ecological footprint', and as a teacher had been trying to engage his senior primary school students to measure their individual footprints. For further details on the 'ecological footprint' see Rees, 1998 and Wackernagel & Rees, 1996.

Al spoke about the logic of practices that take into account environmental conditions:

> *I am always aware of what I can and can't grow… I am aware of the poor (sandy) soil here… in our climate of course, exotics take a beating, that is why I think we should plant natives… its being aware of the environment and doing your bit for it. So I mulch, underwater, I put in windbreaks, plant hardy natives.*

An extension of Al's practices was some research partners expressing concern over invasive species[54], either exotic or native. Eighteen research partners expressed concern over invasive species. They demonstrated a consciousness about the preservation of the integrity of the bush, and realised the damaging impact that invasives can have. Rolf stated:

> *many people are unaware of the impact of invasive species, and that they may interfere with the integrity of native ecosystems… I do my bit by alerting my neighbours to existing and potential invasives. I often visit neighbours gardens or walk in the peripheral bush pulling out invasive species.*

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[54] There have been long debates about the problem of invasive species, with some scholars advocating strong measures to eradicate them and maintain the integrity of the bush. Other scholars have identified the aversion to invasive species as a form of xenophobia. For extended debates on this issue see: Brook, 2003; Enserink, 1999; Fay, 2001; Low, 2001, and 2002; Peretti, 1998; Perrings et al, 2002; Simberloff, 2003.

There were other research partners who felt invasives were not a problem and that

> *invasive species only compromise areas that have initially been disturbed by humans, and it is a matter of how one handles them… I do get rid of them, but I still question… in the bush nature is resilient enough and will not allow exotics to take over* (John).

Within a broader context there were some research partners who felt that having a relationship with all plants, included weeds and invasive species. This relationship (with all plants) reflected recognition of the interconnectedness between all species and the Earth; it was also the bond expressed through Wilson's 'innate emotional tendency'. Jimmy, a gardener who welcomed all plants perceived weeds differently. He reported that although he had invasive species, he didn't

> *feel antagonistic to them: they are part of the garden… I monitor them… if you look around here* [the suburb] *they are growing everywhere… so what really is a garden? Why can we not be welcoming of all species? My cooperation with all the species and aspects of the garden will bring about a balance. You don't just care for one type of plant.*

Jasmine offered another perspective, one that highlighted a human dimension to weeds:

> *I have been told that invasive plants are a problem… but then are not weeds and plants self-regulating? We are the biggest weed on the*

planet… we are the ones who introduced this problem, why blame these species? Just because they are known to be opportunistic and will take over disturbed ground… what about us? Are we not more opportunistic? Look at the human species, and how we dominate over one another and exploit life on this planet.

These perspectives on invasive species highlighted the differing perceptions of research partners to complex issues of ecosystem integrity. These perceptions were also indicative of various understandings and applications of the sense of stewardship. The different viewpoints suggested that what one research partner perceived as a responsible garden practice, another saw it differently. Yet both may be interpreted as manifestations of stewardship: to conserve native species and natural habitats, and having a mindful and ethical relationship with all plants.

Some research partners saw their role as agents of change: influencing neighbours to adopt practices that were not harmful to the Earth and did not damage fragile ecosystems in the garden. Though I did not initially regard influencing neighbours as a practice, it was one that some research partners spoke of at length. This influencing was a deliberate and conscious act for Nikki who was passionate about her understanding of natural practices that respected the Earth.

It's important to me that I raise the consciousness of people to implement practices that do not harm the Earth. The best way to start is in your own backyard with your neighbours, especially if you know they

are engaging in things that are not beneficial to the environment. I talk about invasives, lawns, chemical use, water awareness.

Mindfulness and observation were often linked to research partners becoming embodied in the particularity of their gardens. For many research partners, feeling and digging the soil, noting organic content, observing worms and other organisms interacting with the materiality of the soil, was an ancient but immediate point of communion with their gardens. Some partners mentioned being focused on the on the practice of turning over the soil and noting the underside of a clod of soil, to determine its tilth. 'Feeling the earth' and *mixing it with their (bare) hands*, of making compost and turning it, or of adding manure to soil was that tangible, grounding experience of knowing they were intimately involved with the garden. There were echoes of Leopold's land ethic, and valuing of the land. Kellert (1993, 43) writing about biophilia and linking it with Leopold's land ethic, argues that 'attributing value to nature confers distinctive advantages in the human evolutionary struggle, and that conversely a degradation of this human dependence on nature brings about the likelihood of a deprived and diminished existence'. Research partners were able to ascertain and attribute this value to the soil and to all the other living organisms within the garden. *The soil (with water) is the source from which life springs: it anchors plants and provides nutrition for their growth; it is a living organism in itself* (Cliff). The soil was also 'earthiness' and humility; for some research partners it represented a valued gift from which all life had sprung. There was a sense of being able to celebrate a common origin with other living things, as well as expressing interdependency between living things.

For Fiona, coming from South Africa,

> *where in that cradle of human evolution I could feel my origins… and now through gardening the mere act of submerging my hands in the soil always reminds me of something in my blood, a connection with all those living things that make up life on the planet, and who arose out of this common soil. The soil is the crux of being involved in gardening… somehow there is joy in knowing that.*

Leonie explained that improving the soil with organic matter was a valuable practice for it increased its health and fertility for growing plants:

> *it is important for me to work with the soil… initially it was hard clay, but over years I have made a point of working in it and with it, of improving it, of feeling its consistency… compost and organic matter make such a difference… I can see the results in my plants.*

Gay spoke about need to preserve the integrity of the soil for others, highlighting intergenerational equity, and 'passing on' of the Earth to others:

> *if we are to maintain a relationship with nature, become more environmentally conscious in our dealings with the Earth… we need our hands to be dirtied by the Earth and know that what we do in the garden has a long term focus, that my kids will embrace and practice in the future. Other people need to be aware of practices that have a future perspective.*

Cliff spoke of having a relationship with the soil and it enabling him to be self-sufficient:

> *I am an organic gardener, and growing food organically is how gardens traditionally developed. I work the soil, I feed it, I look after it, I respect it, I depend upon it, it has value… it is alive, and a gift to be nurtured. To grow my own food, I need to treat it as a companion. It makes me realise why I am human.*

Apart from their attachment and understanding of the role of soil other research partners spoke of different practices that made them feel one with the garden. Some spoke of collecting seeds and propagating them, watching new seedlings arise, and the care required to look after them. Others mentioned correct pruning practices; some focused on monitoring of plant health. A few saw that harvesting of fruit or obtaining cut flowers were practices that brought pleasure and fulfilment to their lives. These practices were their contributions to being co-creative with the Earth. Bev described the importance of propagation.

> *I collect my own seeds, I do my own cuttings. I have seed trays in which my seeds germinate… I have to be so careful in the way I look after some of them, especially ornamentals, and how I transplant them. It gives me great joy being able to see them eventually grow into mature plants… even greater joy to be able to give them away to friends… its my contribution to working with nature.*

Christine whom I taught to prune stated: *now I see how important correct pruning is for healthy flowering and productive fruit trees. I never realised that sensible pruning showed care and respect for plants.* Pam, whose garden was filled with flowering deciduous trees and shrubs, observed that

> *the tree that is properly cared for, pruned, given manure and mulched grows healthily and well. My flowering Japanese cherries are nurtured to produce a marvellous display of colour in spring… I love all my flowering plants… It's also such a thrill to see them displayed in a vase on the kitchen table… I have a deep relationship with my special flowers.*

Rosemary reflected on the delight of growing one's own food:

> *to grow my own fresh vegetables, to watch fruit mature and ripen, to pick it and savour it… its all a gift that gives me such pleasure… I give thanks to God for being the recipient of such blessings. It makes me feel good and promotes health.*

A major theme of research partners that signified ethical relationship with the garden was their use of 'organic and/or natural' gardening practices. Six research partners in affirming their use of organic gardening practices admitted to being influenced by Rodale's[55] methods of organic gardening. Similarly four referred to permaculture and the influence of Mollison and Holmgren[56]. Almost 60 percent (Table 5.1) of interviewed research partners

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[55] Rodale's *The Basic Book of Organic Gardening*, (1980) is the classic source for gardeners involved in organic gardening. Bennett (1988), Hodges (1991) and Murray (2006) take up and expand on methods of organic gardening as it has evolved from Rodale's seminal book.

[56] Permaculture is sometimes identified as a form of organic gardening. It is a method of gardening developed by Mollison (1994). Holmgren (2002) explores possibilities of expanding the practice permaculture into a global context for the twenty first century and Morrow (1993) describes the philosophy underpinning permaculture.

explicitly claimed to use 'organic and natural' and permacultural gardening practices. Twenty one percent referred to engaging in 'earth friendly practices' (Table 5.1). These practices pointed to a way of being in the garden, a relational ontology that demonstrated care, responsibility and respect and reverence for it, its various living and non-living components. Ableman (1993) writes that organic practices are not a new discovery, but that their origins are very old: stewardship is testament to practices that are organic. Organic practices replicate the time honoured traditional methods of gardening practised by many ancient and indigenous cultures. Moreover, a central focus of organic gardening is on the viability and health of the soil to ensure favourable growing conditions for plants. Engaging in these 'natural' practices was described by research partners as a reaction against using chemicals[57] and lessening their detrimental impacts upon the Earth. Some research partners also saw organic gardening as a way to counteract the growing commodification of gardens. Over 60 percent (Table 5.1) of research partners stated that they had an aversion to chemical use. Mark had much to say on organic gardening practices, chemicals and commodification:

> *(Fiona and I), are conscious that our practices are natural, respectful and reflect our love and attachment to the garden and the Earth… to maintain our inherent relationship and involvement with the Earth, we make a point of engaging with it as a living thing… using chemicals either in the soil or on plants or against insects is biocide… why poison*

[57] Synthetic fertilisers impact on the structure and buffering ability of soil; pesticides, persist in the soil, air and waterways, and bioaccumulate in food chains, affecting both animal and human health.

> *that on which we depend for life… Similarly commodification is a further sign of the plundering of nature by exploiting resources and producing things for the garden we don't really need… it takes away from those time honoured practices that revered the Earth and all its processes.*

Bill reflected on the history of organic gardening:

> *For years humans survived using natural practices: rotating crops, using manures, composting, treating the soil with care… waiting and observing… and then chemicals appeared, and the whole agricultural landscape changed… and it's happened in gardens. We need to create the awareness that man does not ravish the Earth, but develop greater respect for creation.*

Six research partners, familiar with Carson's (2000) seminal work *Silent Spring*, used her critique as a basis for justifying their aversion to chemicals. Al for example, stated that he had read Carson some years ago and that from his understanding rather than the use of chemicals in gardening and agriculture decreasing, they had increased exponentially[58]. Al comments,

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[58] Amongst others, Hynes (1989), took up Carson's theme of 'Silent Spring' and the problem of chemical usage and extended it to incorporate such issues as biotechnology and new systems of reproduction technology. She described these new issues in an aptly named book: 'The Recurring Silent Spring'. Biotechnology was a concern for a few research partners, especially in referring to GM plants.

> *I was horrified at what she presented. Birds falling out of the sky because of DDT. And have we changed because of what she said? Very little… we have made it worse. That's why I practice ecologically safe and responsible methods of gardening… methods that protect ecosystems.*

Lois reminisced about when she had a vegetable garden, and why she had to give it up:

> *I used to always grow my own organic vegetables… ten years ago I gave up when I realised my neighbour was using chemicals and these seeped under the fence affecting my soil, poisoning some plants and even affecting my health. I was so angry, but what could I do? I used to love my vegetables: they provided freshness and satisfaction… a connection with the early history of gardening when people were self-sufficient. I imagine that's what it was like in the Garden of Eden.*

Kay, who grows only vegetables, has chickens and is not interested in ornamental plants asked: *Why can't we go back to basics? I use every possible manure and lots of straw and get the most delicious vegetables. The chooks help. Why can't we go back to those practices that are natural, and which encourage simple living and prevent us from stuffing up the planet?*

David an ex-agriculturalist and a convert to organic gardening as a result of reading Rodale's book, stated:

> *How can you taint and compromise those processes that have been occurring in the soil for millions of years. You can't add chemicals*

without damaging fragile ecosystems, and upsetting what may be a natural balance. That's why I now incorporate organic gardening methods – its one way of caring for the soil upon which we are so dependent.

Other research partners extended their aversion of the use of chemicals beyond their gardens to the Earth and to protecting fragile webs and ecosystems. Val who loved growing her own fresh vegetables as well as natives spoke about reverence and compassion:

for me part of living in harmony with nature and protecting it from aberrant humans… means showing kindness and consideration… being respectful, and nurturing… protecting fragile ecosystems… in my garden, I engage in 'earth friendly' methods, ones that respect the health of the garden… if you love your garden why use chemicals? There has to be an extended focus beyond the garden to something greater… nature and the planet.

Suzanne, constant in her understanding of the garden as a microcosm of the Earth, and as representing Gaia reflected that

the garden is a part of the Earth… I love and respect both… they are sources of joy, inspiration and celebration… I get overcome with the generosity of creation… so how can toxins enhance our experience of these wonders? How can chemicals contribute to a greater relationship with the Earth? They can't.

Some research partners were critical of the affects of chemicals on insects and animals. Trevor, proud of his native garden spoke of natural means of pest control:

> *my garden is natural and native… spraying in gardens for pests is unnatural and foreign: a destruction of that which is natural… There is a lack of understanding of organic and natural processes: by planting complimentary and companion plants one does away with pest control… often the more chemicals one uses the more problems develop.*

Mary admitted to the problem of pests in her garden:

> *I have noticed that the frogs in the creek behind the house have all but disappeared… the neighbours use lots of sprays… I admit pests are a problem, but I live with them… it's a matter of prudent planting, airflow, bait plants, predators (aphids and lady birds)… my garden looks so much healthier than those of my neighbours: I refuse to use chemicals.*

Organic gardening also focused on not wasting resources by incorporating recycling and reusing of materials and minimising external inputs. For Mattie, recycling, and being 'frugal'[59] (as an aspect of reverence), was important in his commitment to practices that respected the Earth. It also highlighted his personal aversion to the commodified aspects of gardening:

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[59] Skolimowski's (1993) understanding of reverence, extends to include the ecological value of frugality; the ability 'to live simply and judiciously' (p.36).

I use what is available… I reuse everything that passes through the house and garden… You might say I scrounge… I don't want to compromise my practices by getting onto the production bandwagon… look at nature: doesn't waste, reuses everything, decomposes, nothing is squandered.

Kathy, committed to recycling and reusing, also provided a perspective on not being wasteful:

I reuse plastic bottles as mini glasshouses to protect seedlings from frost, and milk cartons as seed propagating boxes… I reuse string and pots… any wood I pick up from street collections I use as borders for the beds… in this way there is little wastage… it also shows a reverence for the gifts nature provides us with to garden.

In recent years drought has plagued many parts of Australia, including Tasmania. Many research partners expressed concern about water usage in gardens, and in describing their gardening practices evidenced prudent application of water to the garden. A theme that I interpreted as being important to them was the views they had towards lawns in gardens. Some who were conscious of water restrictions and were also aware of and motivated by an aversion to chemicals and their application to lawns, had misgivings about maintaining and having lawns[60]. I interpreted these misgivings as a way of research partners expressing responsibility for the preservation of resources and practising frugality by not being wasteful. Although

[60] For discussions on attitudes to lawns, as well as their practicality of their high maintenance requirements see Askew & McGuirk, 2004; Pollan, 2002; and Robbins *et al*., 2001.

from observation lawns in Hobart may involve relatively little inputs or waste – compared to other garden uses – some research partners (Table 5.1) believed that lawns were associated with status (Pollan, 2002) and commodification, as well as requiring high inputs of water to be maintained. Al was forthright in declaring that lawns were wasteful: *they take up valuable space that can be used for other purposes… their high water and chemical inputs by some gardeners do not contribute to responsible and ecologically minded gardening.* Research partners adopted a number of different attitudes and practices to lawns. Although some retained their lawns, others did not maintain them or allowed them to die back in summer time; some were involved in decreasing lawn size because of its high maintenance requirements, others with gardens abutting onto native bushland had what I termed 'marsupial lawns' that allowed for browsing by marsupials. Christine summarised her thoughts on lawns:

> *I have a large area of lawn… it's a huge effort to mow it… I don't care for it letting it die back in summer time… I'd prefer to have large beds of annuals and perennials… What amazes me is the amount of effort that some people put into their lawns: excessive water, 'lawn food', time manicuring edges… and for what purpose? Is it a symbol of status? For me it's such a waste of resources, not to mention the damage caused by the fertilisers.*

David the ex-agriculturalist added that

> *intricate connections exist in the soil and the garden… use of chemicals on lawns in particular, break down the structure of the soil, make it*

> *sour (particularly if its clayey) and destroy the micro-fauna… the buffering activity of the soil is also compromised.*

His comment highlighted the interdependencies that existed between living organisms and geophysical processes. David's – and other research partners' – understanding of these processes provided an insight into the ethical nature of the relationship between gardener and garden: the importance of practices that demonstrate moral responsibility.

Research partners' understanding of these intricate connections incorporated practices that pointed to a reverence and love for the Earth. From his upbringing in Germany Hans' sense of reverence and compassionate caring for his garden was extended into practices:

> *I am aware and respectful of natures' biodiversity and integrity… of its interdependence and perpetual, self-regulating processes; of its self-sufficiency. In Germany we employed* [garden] *practices that valued the timeless bounty of the earth: in the fields and in the forest. My* [organic] *practices pay tribute to that bounty.*

I interpreted Hans' gardening practices as manifestations and applications of attitudes of love, respect and understanding of how Earth processes occur and are interrelated. His caring attitude was expressed as compassion for the living garden: *I have to 'feel' what is going on in the garden… and I respond to that in the way I work in the garden.*

For Susanna, reverence prevailed in many of her descriptions of her engagement in the garden:

> *Reverence is a spiritual process, one that entails responsibility, of being filled with love for this planet, of an enduring relationship it… reverence focuses on co-existence and interaction with other species… it is cooperating with God's creation. My motivation for my practices is this abiding sense of love and respect… practise what you believe.*

Reverence for the Earth was also expressed by research partners respecting and maintaining biodiversity and habitats.

> *I have been here three years. It is a big block, all native. I want to preserve it as a haven for animals and maintaining native biodiversity. I sometimes cry when some people's practices show contempt for native bush… they hack* (the native bush), *put in invasive exotics, poison habitats. My practices involve maintaining the bush as it is and trying to not disturb habitats* (Vivienne).

Paul, whose garden borders onto bushland, was worried about the impact of suburbanisation on habitats:

> *I love my garden, because it is becoming a habitat for other animals. I have a fondness for animals, birds, frogs, marsupials… but I am worried about their exclusion from suburbs… They constitute the greater biodiversity of an area like ours… I am slowly ridding my garden of exotics and replacing them with natives, which will eventually flow into the bush. I hope to create a habitat for wildlife in my garden.*

Jimmy related current gardening practices, and a critique of GM plants, to the future role of gardens as places maintaining species richness:

> *I believe that as more GM plants emerge, local suburban gardens will become places of plant diversity and repositories of old world, heritage and parent plant stock. What I do in my garden is retain many of the original species of plants: its difficult sourcing some but I only select plants that I know aren't GM.*

Jimmy's emphasis on selecting plants that were non-GM, highlighted another common practice of research partners, that of plant selection. Many (see table 5.1) provided a range of reasons for selecting specific types of plants. These selections apart from the personal preferences reflected practical consequences such as an awareness of environmental conditions (soil, shade, slope), maintaining habitats through avoiding potential invasives, and planting plants that were hardy and less reliant on resources. Conscious selection of specific plants made real the sense of respect and reverence for the integrity of ecosystems and their constituent interdependencies, for habitats and biodiversity. This practice of conscious selection bears out the truth of stewardship as an ethical way of being and living in the garden.

Stewardship, as a relational and reciprocal practice of engagement in the garden, recognises the garden as gift and blessing. Research partners though not all explicitly identifying the garden as gift, in their descriptions of their relationship to the garden and in their gardening practices there was a sense of it as a gift: *it's something special for which I am thankful, and because it's special I have to look after in a loving way* (Bob). Thankfulness for the gift included continual tending and nurturing on the garden. Raie described reverence as gratitude for the gift of creation.

> *Gardening is a gift… creation is a gift… my flowers are a gift to behold… I am thankful for the gift. It is a privilege to be able to be*

> *involved with nature and her ongoing creation… I put so much effort into tending my flowering plants… I prune, spray off aphids with soapy water, I fertilise with sheep poo, I add compost to the soil. I invest into my relationship with flowers in practical ways… It fills me with awe and wonder.*

In biblical sources creation is gift, and the steward is charged with looking after this gift. The gift is a blessing, and as such calls forth celebrating it as a blessing. Celebration[61] of the garden and the Earth is a manifestation of stewardship. For some research partners the mere working in the garden and beholding the unfolding results of their practices was marked by various expressions of celebration. For some there was an evocation of awe, joy and pleasure.

> *It is such a joy to see things come into fruition… to pick carrots and tomatoes and plums… to observe them and have the time to indulge… there is always something interesting happening in the garden each day… it is resurrection, rehabilitation, change, death, energy… and I am involved in it… I have created a garden that responds to my loving practices* (Kathy).

Research partners' love of plants and their sensual affiliation with them was a reason for celebrating the seasons and the gifts that the Earth provided. Some

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[61] Celebration of the Earth's gifts, goodness, blessings and fecundity through rituals and other forms of expression is recognised as an ancient tradition within both indigenous cultures and world religions. See Abram, 1996; Bear *et al*, 1991; Campbell, 1972; Fox, 1983; Harvey, 2005; Hausman, 1987; McCarthy, 1991; Montilus, 1989 and Versluis, 1992.

also felt that they had contributed to the ongoing creative unfolding. Pauline, with an inherited 100 year old garden (and house) reflected:

> *I love to smell the roses, watch the camellias, rhododendrons and magnolias come into bloom. There is that wonderful spectacle of flowers developing and flowering… the process of watching this taking place is breathtaking and miraculous. I know that I have contributed just that little bit to see this floral display… but it also behoves me to continue working in the garden to maintain this spectacle of beauty.*

Love of plants was a constant theme amongst research partners. Some had a love for natives, others for exotics, and for most of them it was an eclectic mix of both. Some loved the colours, others the scents, some the textures of leaves, others the shape of an individual flower, others the pursuit of a rare plant. The focus of gardening is on being involved with plants, and whether or not these are grown for food or for beauty or for any other reason, it is plants that make the garden and the gardener.

> *The Earth is a garden… I love all plants… they colour my heart… they are captivating, inspiring… I feel part of that creative circle… I know that I have helped these flowers to grow… my pruning, watering, picking off scale, fertilising, have helped make this flower* [holding a camellia] *what it is… I am mesmerised by the beauty of nature… why do I garden? So I can participate in making beauty* (Pam).

Freda's celebration was all encompassing:

> *I love my garden…It's a practical love. All plants and animals are welcome in the garden… I feel attached to all of life here. We have over 30 species of birds. I love to talk to the plants as they have feelings… the garden is magic and I feel humbled to be given this responsibility of co-creation… its captivating, compulsive… the garden is a gift.*

Research partners added other dimensions to the quality of celebration. Magda spoke about *aliveness* in the garden:

> *In Poland we were always overjoyed at the coming of the seasons and the unexpected manifestations of nature. We celebrated them through festivals* [and] *when I am in my garden I feel enriched: flowers, potatoes and chickens and ducks, doing all those things we did on the farm in Poland. There is a sense of hospitality, happiness being in the soil and* [out in the] *air: it fills you with gladness at being alive. You have to do things in the garden to know it is alive.*

Trevor celebrated his achievement in creating his native garden:

> *It is a great joy for me to work in the garden and see the results… (despite neighbours' criticisms) I have developed my native garden in an effort to reflect the local flora and fauna… I see it as a corridor for animal … but it's also great to know that Australian natives adapted to this dry continent have as much beauty and give as much aesthetic pleasure as exotics.*

Leonie summed up of her celebration of the garden, in a way that echoed Gaia along with a sense of co-creativity.

> *There is something about my garden… I see it as a holistic ecosystem… its interconnection with all living species… I have a sense of worshipping… it is a ritual, the seasons, watching it change… a spiritual connection… knowing that I have done my part to improve my relationship with the Earth.*

Gay laughed about the antics of her children and the pets and the chickens in the garden despite her intentions and best practices at maintaining it:

> *There is a playfulness*[62] *in the garden… this is brought out by our chooks, by our children, by our doing things in the garden and then being teased by all the happenings (of nature)…we plant things and they grow, and then don't produce… or the kids trample them or the chooks dig up vegetables… it's a game, a serious game and we're involved in it. We want to reclaim ownership of the Earth.*

Gay's inference to 'reclaiming ownership of the Earth' signifies an element of the foundational qualities of stewardship. Ownership of the Earth is a relational way of being that interacts with the Earth as the moral subject. It is a relationship that calls upon gardeners to be 'keepers' of creation, expressing reciprocity, trust, and compassion. Ownership is being incarnated into the Earth; living *in* the planet as Weston (1994, 82) states.

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[62] Playfulness appeared in other research partners' descriptions of their experience of and joy in the garden. It is also a common theme that permeates the writings of the Middle Ages mystics Meister Eckhart (in Mathew Fox, 1980); Hildegard of Bingen (in Uhlein, 1983); Mechtild of Magdeburg (in Woodruff, 1985); and Julian of Norwich (in Doyle, 1986).

In the final analysis, the practices expressed by research partners and described here are the living and vibrant expressions of their relationships with the more than human world. Research partners' continual association of the local garden to the greater garden of Earth was evidence of those relationships extending beyond the local garden to encompass a greater whole. These practices as manifestations of caring and loving relationships to their gardens also underscored a sense of ecological responsibility. These practices made sense by making real the foundational and extended qualities of stewardship. They enfolded the gardener into the garden and pointed to a yearning, a desire for right relationships with the garden of Earth. Stewardship cannot be mere theory: it has to be a mindful practice, a way of living in the garden and *in* this Earth as a daily communion. It is to that mindful practice of stewardship that I next turn through five detailed case studies.

6 MANIFESTATIONS OF STEWARDSHIP

In the last two chapters I described underlying attitudes and values, and gardening practices of my research partners. I suggested that these may be interpreted as being inspired by a range of motivations that share the qualities of stewardship as described in a wide and diverse literature. Practices of research partners make sense of, by making real, conceptual discourses about gardening and stewardship. In this chapter, I set out five participatory action research case studies that provide deeper insight into the embodiment of these ideas of stewardship. This chapter is a culmination of sixteen months of sharing the gardens, lives and stories of the five groups of research partners.

I chose participatory action research as my method of inquiry in this phase of the project to allow for an in-depth exploration of my research questions. These research questions being first, do suburban gardeners in Hobart articulate a sense of stewardship for their gardens and is it reflected in their gardening practices? Second, if this sense of stewardship exists to what extent and effect does it infer a wider ecological impulse?

There are a number of definitions of participatory action research, however one that best describes the current study is

> Participatory Action Research is research which involves all relevant parties in actively examining together current action (which they experience as problematic) in order to change and improve it. They do

> this by critically reflecting on the historical, political, cultural, economic, geographic and other contexts which make sense of it… it is action that is researched (Wadsworth, 1998, np).

Although the meaning of participatory action research is contested there is agreement of its significance and the validity of various approaches used in this research approach (Greenwood, *et al.*, 1993; Kemmis & McTaggart, 2000; Kindon, 2005; Pain, 2004, Wadsworth, 1998). Key feature of participatory action research are 'self-reflective cycles of planning a change, acting and observing the process and the consequences of change, reflecting on these, and then replanning, acting, observing reflecting, and so on' (Kemmis & Mc Taggert 2000, 595).

I perceive participatory action research as an intensive, inclusive and interactive process for examining current shared ideas and practices with a group of people. Participation is involvement, empathy and reciprocity. It is collaboration, discussion, argumentation, resolution, posing new questions, working together to seek answers, discerning courses of action. Participation involves a partnership of equals setting out to examine, together, issues of mutual interest and then engage in a process of praxis: of participatory action. A partnership of equals precluded my taking on the role of principal, or as someone endowed with superior knowledge – rather it was mutual reciprocal engagement, one in which I was as much student and teacher as the research partners were themselves. The participatory action was both of a practical nature, and also involved shifts in consciousness and ideas and attitudes. These shifts result from the 'self-reflective cycles' expressed above.

In the five case studies of this research, that spiral of 'self-reflective cycles' was experienced in the continuous discussions between myself and the research partners,

and contributed to ‘an emergent and intensifying process, gaining increased dimension and depth’ (Greenwood *et al.*, 1993, 179). During the action research, research partners reflected upon ‘what people do, how they interact with the world and others, what they mean and what they value, and the discourses in which they understand and interpret their world’ (Kemmis & McTaggert 2000, 596). Their world was the very intimate space of their garden

In setting out to engage in this participatory research action I sought to invoke with my research partners an atmosphere of mutual reflection and action (Kindon, 2005), and reciprocal learning about gardens and stewardship. Although the initial task of this participatory action research was not to bring about direct social change[63] (Pratt, 2000), the reflective and learning processes with research partners explored and challenged current ideas about gardening practices and whether or not these practices articulated a sense of stewardship. However in investigating the means by which qualities of stewardship could be further manifested through garden practices, social change as a theme became apparent in the course of the action research: Four of the research partners in the action research explicitly mentioned that gardeners could be *agents of change*, influencing others to adopt practices that exemplified a sense of stewardship.

Through participatory action research new knowledge was generated by the shared collaboration of myself and my research partners. Through this collaborative sharing

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[63] A founding principle of participatory action research has been that it provides an avenue for social change in people’s behaviours. Further clarification of this premise of participatory action research, as a means to achieving social change, is explained by: Baylina & Schier, 2002; Kemmis &Mc Taggert, 2000; Kesby, 2000; Pain, 2004; Pratt, 2000.

and the intimacy of the interaction, we were able to critically reflect upon this knowledge, take action if possible, challenge one another to change our behaviours (and others, as my research partners intimated), derive new ideas and then resume the whole cycle again: exploring, reflecting, taking action. This conscious and mindful implementation of the 'self-reflective cycle' provided us with further knowledge, insights and practical skills into gardens and stewardship. The process of reflection became an act of mindful wakefulness: when we met, and when we had time to reflect on past meetings on our own. It was a process that we engaged in at the start of every meeting: recollecting, reviewing, clarifying ideas, exploring possible outcomes and courses of action. On our own it was often time spent either in meditation (as was the case with two of the research partners) or as a conscious, cognitive task that needed time and analysis.

Though I was not initially aware of it, about half way through the action research I recognized my role as an agent of change. An act of wakefulness had occurred. As four of the research partners had perceived themselves as agents of change, it was surprising that I did not identify myself as such, at least initially. Yet from the beginning of the participatory research, as they later stated, the research partners had always seen me as an agent of change: someone to challenge them and to provide a platform for learning and expanding their horizons about gardening and stewardship: shifts of ideas and thinking were apparent from meeting to meeting. My role as agent of change was also one of empowerment for the research partners to take up these challenges, to be mindful of new ideas about gardening and stewardship and to live these through their garden praxis. There was reciprocity in the manner in which we were able to assist one another in this cycle of self-reflection: learning from one another and growing in understanding of stewardship. It made us realise that being

agents of change is an unsettling but necessary vocation if we were to inspire people to adopt a gentle and compassionate relationship with the Earth. This reflective, enlightening and challenging experience of action research was situated within the very particular, material space of the garden.

CASE STUDIES

The case study, 'allows an investigation to retain holistic and meaningful characteristics of real life events' (Yin, 1989, 14). The 'real life events' that are the focus of the case studies that follow are the experiences of embodiment of research partners in their gardens and the emplacement of stewardship practices within these gardens. Each case study presents a different perspective on research partners' expressions, understandings and practices of stewardship. Stake (2000, 437) identified three main types of case study: the intrinsic, the instrumental and the collective – the last typifying the approach taken in this case study. This collective approach is an amalgam of the intrinsic, which considers the topic of the case 'in its particularity and ordinariness to be of interest' and the instrumental, which' provides insight into an issue or to redraw a generalisation' (Stake, 2000, 437). In this instance the specific context is the garden and the broad issue is stewardship.

Each case study was 'a complex entity operating within a number of contexts: physical, economic, ethical, aesthetic and so on' (Stake, 2000, 440). These contexts refer to the individual characteristics and identities of the gardeners, and their attitudes, values and practices within the garden. These five cases were also distinctly individual as they were similar. They were similar in that research partners shared an intense passion for gardening and a sense of stewardship as deep caring for the Earth. The case studies were different at the level of specific gardening practices and understandings and expressions of stewardship. Initial meetings with the five

groups of research partners established practicalities of the research and a direction for the participatory action research in order to explore their perspectives on gardening and stewardship. Later meetings established a specific focus for each case study, gleaned from research partners' individual understandings and manifestations of stewardship.

1: CHRISTINE CARING FOR THE SOIL AND THE GARDEN

Christine was a 50 year old unemployed single parent living in Montrose, a northern suburb of Hobart. After tending to the needs and wants of her two children, Christine spent most of her time in the garden, saying *it is my sanity; the garden is my life, it is respite from looking after the children.* On her own acknowledgement she would spend sometimes between 20 and 25 hours a week in the garden: *it is an irrepressible urge: I have to be in it, digging, dead-heading, planting new things in season, getting rid of this lawn.* The *urge to garden* expressed in different ways, was a commonly theme in discussions with Christine.

Christine's garden was in a low rainfall area (530mm), with the original vegetation zone being dry sclerophyll woodland. Her garden was on a medium sized, slightly sloping block, facing north (or towards the winter sun). The bulk of the garden was the backyard, with a large area (>60%) dedicated to lawn, with garden beds around the fenced perimeter, and a couple of curved beds digressing away from the fence and meandering into the middle of the lawn. The soil was hard black clay, not very conducive to easy gardening. In two corners of the garden moisture was retained throughout the year, making digging difficult, yet at the same time supporting shade-loving species. Her garden type was a complex flower garden with 230 species, the main life forms being herbaceous perennials and evergreen shrubs. She was not overly interested in natives, although she admitted to their suitability for Australian gardens. Christine was inclined toward an adaptive garden, one that combined both native and exotic species. She believed that even with exotics it was still possible to garden in ways that did not impact adversely on the Earth. She had a penchant for herbaceous perennials and exotic deciduous shrubs and trees. In places the garden

resembled a ‘cottage garden’, emphasising the aesthetic and somewhat haphazard character of the garden through colours, textures, beauty, balance and flowers. In other places, the garden took on ‘gardenesque’ characteristics (Zagorski *et al*., 2004). Christine did not wish to affix labels to her garden style rather she saw it as her garden, an expression of her creativity and the plants she liked.

Christine was a devoted gardener who recognised the need to engage in practices that cared for the soil, soil that she recognised as her ‘land’, her *bit of Earth*, for which she had responsibility. Although familial and financial constraints sometimes stopped her from devoting more time to the garden, it was nevertheless, one of two prime occupations in her life. Her attachment to the garden and gardening was expressed as:

> *permanent and personal, a basic urge to tend and to nurture. It is a source of solace, I put my soul into it; it is my space, my personal special space. It is not merely land around the house, it’s engaging in something that is a deep part of me as a human… I love to watch things grow.*

After living in four houses and gardens, and accumulating a range of experience and knowledge about *soil types, climate, water needs, environmental variables, experimentation, different* (cultural or cultivational) *requirements of plants, and the changing moods of nature*, Christine felt confident about creating her dream garden based on these experiences. She felt strongly about getting to *know* her garden space: to be *in* it, to observe, feel and tune in to the soil, the plants, the rainfall, and all the elements constituting her garden.

> *It's all a matter of trial and error, at looking at all the environmental conditions, what will or won't survive, developing insights into nature. You have to observe with a deeper sense, a keenness of perception, recognising that nature is an intuitional thing, a learning process with which one becomes involved.*

One of her main concerns about gardening and what she termed as *the environment* was the manner in which the Earth and land was *treated as a chattel, to be bought, used and abused merely to suit people's ravenous hunger for whatever they needed… it's all part of treating nature like a thing to be bought.* In one of the first meetings with her, she shared with me her love of a passage attributed to Chief Seattle[64]; a passage that spoke to her of the need to value and revere the land and the Earth:

> How can you buy or sell the sky, the warmth of the land? The idea is strange to us… If we sell you the land, you must remember that it is sacred, and you must teach your children that it is sacred (Bristow, 1995, np).

She said that when she first came across this passage many years ago, it influenced her in developing a new perspective and understanding on the role and value of land. During our discussions, I suggested Christine read Leopold's 'A Sand County Almanac' (1949/1989), and his proclamation of the 'Land Ethic'. Some months later she said that although,

> *I didn't fully understand it, but this is exactly what concerns me about the way we treat the land and soil, and all those living things that are*

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[64] Numerous references attribute the Chief Seattle passage to a television script writer, Ted Perry, in 1970. See Bristow, 1995.

part of it. We need to understand the depth of our relationship to the land and to nurture it.

Similarly, she felt responsible for the soil in her backyard; it was part of that land that she spoke about and needed to be treated with care and respect:

To have a garden I need to feed the soil, keep it healthy, regard it as a treasure… if the soil is well this will decrease pests, increase vitality of plants, and contribute to a more balanced garden… it also increases my understanding of 'the land'.

She said that having gardens in various areas around the East coast of Tasmania and Hobart had heightened her awareness of different environmental variables and characteristics of soil. Having lived where the soil was sandy and water scarce, she was also judicious in her use of water:

I am appalled at people wasting water because they don't understand how precious it is, and they don't know how to apply it to their gardens… People waste so much water using sprinklers… my experience has shown that the best way to water is some form of a drip or slow watering system… water and soil go hand in hand.

Christine also expressed concern over a number of other issues that affected gardening and endangered *the environment.* She could not understand why people did not realise the dangers of using chemicals.

If land is an inherent part of us how can we be involved in poisoning it? We are poisoning ourselves… if you have smelt some of the chemicals being used in gardens doesn't it make you wonder about their effect not

> *only on us, but on other plants and creatures? So why would you use chemicals in your garden anyway?*

Apart from water misuse, and people not being aware of the dangers posed by chemicals, she was also concerned about the unmitigated urban sprawl and its effects on the destruction of habitats. She was worried by *the spread of suburbs whereby animals are forced out, ground is disturbed, plant and animal life is threatened… that's why I think what I do in the garden is crucial to re-establishing some balance with nature.*

Christine was unimpressed with nurseries, suggesting that they are *overtly dollar focused and influence people to develop gardening practices in opposition to how nature operates.* Practices supported by nurseries, that troubled her included the sale and use of synthetic soil fertilisers, herbicides and materials that took away from the natural functioning of the soil. She thought that nurseries and garden centres were

> *taking away from the simple pleasure of traditional, natural gardening… they fill you with all these unwanted products, supposedly to take away the drudgery of gardening… but then what is gardening if not completely involving yourself in the garden… taking the time and effort to do what nature does in her own time. Gardening is not simple, it is a hard and pleasurable task, one to which I have committed myself, and I don't need all these things to help me along.*

She also made an observation *about a trend in Australia towards artificial gardens, 'plastic gardens', reflecting a social standing, and regarding gardening as a fad… how sad it is that we have lost a sense of what true gardening is about.* Finally she lamented the lack of understanding, caring for and working with *nature*:

> *There was wisdom in the way our ancestors gardened… Its still there, but its also being eroded away… more so today with environmental problems… We have lost our sense of who we are in relation to nature. We are part of it and should treat it as something we love.*

Christine, although vaguely familiar with stewardship from her childhood Christian upbringing, felt that my description of stewardship presented dimensions she had not really considered. Her understanding of stewardship related to *the Garden of Eden, and the way to look after that garden. I think it meant caring for it because it was given to you.* Her gardening practices and ideas suggested to me that they were expressions of the foundational and extended qualities of stewardship as described in chapter two. When I had explained to her that the purpose of participatory action research involved exploring these qualities and how they related to her gardening beliefs and practices, she was keen to embrace them into her craft of gardening. Christine's understanding of those qualities, what they involved and how she would contribute to the practical implementation of them, developed over the time of the participatory action research. Some months into the project she told me that:

> *it's what I had hoped it would be… what I thought I was trying to do in my garden… my stance towards 'stewardship' is simple… gardening is simple… I am concerned about being more 'Earth friendly', of having a balanced relationship with the 'land' and my starting point is my garden.*

For her, the garden was the only place where she felt she could affect change:

> *I live in the garden, I have learnt about nature, through my relationship with the plants and soil. We have a world wide environmental problem,*

> *and we can solve it by starting small in the garden and affecting others by example… I sometimes wish more people could see the value of gardening… it's where we belong.*

This reflection of Christine's expressed a repeated theme common in many of the interviews and a strong feature of discourses in these five case studies: the garden as a microcosm of the Earth. The garden as that intensely felt and experienced connection to a specific place, *a place where I feel at home.* This link highlighted the identification of the garden as a place where research partners experienced their origins.

Initial discussions with Christine dealt with a range of issues relating to how she could expand her current practices and foster a mindful approach to stewardship in her garden. Most of my contribution during the course of the participatory action research, at her behest, was of a practical nature since Christine felt more relaxed with the practical aspects of stewardship rather than becoming involved in long theoretical discussions of it.

We developed a timetable, spanning a year, for pursuing four tasks that Christine saw as a means to further her commitment to stewardship. The four main tasks were to build a compost heap, decrease the area under lawn, enrich the soil and ensure balanced pest control.

Although Christine had had compost heaps before, she admitted they were rudimentary and that she lacked a thorough understanding of the processes of decomposition and building a functional heap. This task involved going through the theory of composting (carbon-nitrogen ratio, materials to be used, layering, temperature and moisture requirements), building two one cubic metre sized

composting ‘boxes’ out of wooden pallets, and starting a functioning compost heap. She considered fertility – as a result of previous experience – to be a crucial aspect of soil health and stability, and the addition of compost and organic matter was vital. She sought out a phrase of Leopold’s was pertinent: ‘fertility is the ability of soil to receive, store and release energy’ (1949/1989, 217). Her pleasure at having a workable compost was strong: *now I can have a place to recycle garden and household waste and watch it increase the health, vitality, growth and beauty of my perennials* – a comment reflecting a statement by Hanh (1992, 23) that ‘a good gardener does not discriminate against compost, because he knows how to transform it into marigolds, roses and flowers’.

Christine resented the amount of upkeep required by the lawn and decided to decrease its size substantially, replacing it with mulched garden beds. In springtime when the lawn grew quickly and was at its luxuriant best, *I spend an hour each week sometimes more trying to mow the lawn… it’s hard pushing it through thick grass… it’s too much.* She wanted to retain a minimal amount of lawn for recreational purposes for her children, *so it becomes a cricket pitch or something like that which will die back eventually and I won’t have to care for it.* She was perturbed by the amount of water and ‘lawn food’ that people applied to their laws in an effort *to keep them green and soft* (cf. Askew & McGuirk, 2004; Robbins *et al.*, 2001). She thought that decreasing the lawn area was a conscious but small way of respecting the planet’s resources, particularly water, and drawing away from the preoccupation with lawns as a status symbol:

> *the less lawn I have, the less water I need apply – not that I want to – and the more time I will have doing all those important things that I*

consider to be gardening… I also feel that I don't have to pursue the status associated with a big, green lawn. It's meaningless.

Forty square metres of carpet was placed over the lawn and around fruit trees dispersed throughout the backyard. Over a period of four visits other areas of the lawn were dug up, with the eventual decrease in area from 200m^2 to 70m^2. More garden beds were created reaching out from beyond the fence boundary, curving around the fruit trees, and being created into circular and ellipsoid shapes within the lawn. Pea straw, sheep manure (to which Christine had ample access) and gypsum was mixed in with the clay of the newly formed beds. The sods were placed upside down in piles with straw in between to allow for dying off of grass; black plastic was placed over the sods to increase soil temperature to allow for the decomposition of the grass. At a later date it was envisaged to mix these clay clods with sand, straw and gypsum, to build up the garden beds.

Being black clay the soil was extremely difficult to cultivate. It was relatively poor in nutrients (at least the nutrients were tied up in the clay), and subject to compaction and expansion due to temperature fluctuations, and availability of soil moisture. Having told me that she wanted to look after the soil, keep it cultivated and fertile, and ameliorate the clay, Christine considered a number of possibilities. She did not wish to use any type of synthetic fertiliser or additive to enrich the soil; she could bring in truck loads of loam, but I informed her, this might also introduce pests and diseases into the soil, and would be too costly. Her sense of ownership of the garden – that it was her space after which she looked by employing her gardening practices and being responsible for the health of the garden – did not allow her to consider employing a landscaper to help her. She said: *I have the time to do it, why hurry? I love to watch nature slowly unfold in the garden… I am an observer… I can do it*

myself even though I know its hard work. This statement emphasised what Christine had earlier mentioned about being a real gardener and how 'real' gardeners 'own' their garden. It is their personalised space where they are involved in all those intricate, time consuming practices, where time eventually does not matter. Her comment also stressed increasing the horizons of time, gardening in the present moment, without wanting to 'speed things up'. This comment made sense of the quality of mindfulness and living in the present moment.

For Christine, composting, mulching and the addition of organic matter were crucial to the enrichment process. The compost had been started; prunings were mulched and mixed with deciduous leaves collected from around the parks in her suburb; sheep and cow poo, were mixed in with the soil; pea, lucerne and ordinary straw were mixed with Gypsum and wood ash and dug in using a tiller. We planted crops of green manure (broad beans, peas and comfrey) which would eventually be dug back into garden as a rich and ready source of nitrogen. Worms were transferred from the compost into various parts of the garden to assist in the breakdown of the clay. Reflecting on this task of enrichment, Christine said:

> *I am committed to having a healthy garden, which means healthy and nutrient rich soil… how I enrich the soil and make it more viable by the addition of organic matter means that I am working in with nature.*

She concluded that *healthy soil is an aspect of caring and nurturing for the land,* a comment making sense of the foundational quality of stewardship.

Not only was the health of the soil an important factor for Christine, but the implementation of pest control practices (as well as eradication of some of the more notable garden weeds) that were 'natural' and contributed to what she saw as a more

‘balanced’ garden. *There is a connection between the health of the soil and the health of the plants, and the insects that live in the garden.* All gardens have problems with pests. Christine used to get frustrated with snails and slugs, and other *beasties,* and their attacks on her perennials, but admitted that even though they were a nuisance,

> *if I could somehow keep a balance, like nature and ensure that things lived in some form of harmony… without resorting to pesticides… good soil and an organic way of controlling the pests would make me feel I am contributing to that balance*.

Christine was particularly fond of the range of perennials she had in her garden, and numerous European deciduous trees and shrubs. She felt it was essential to maintain the health and vigour of these plants. Sourcing information from various ‘organic’ gardening books (Bennett, 1988; Hunter, 1977; McMaugh, 1997), we implemented and experimented with a few of these ‘natural’ pest control measures. The measures adopted were what research partners referred to as ‘natural and organic’ practices.

The properties of certain pest repelling plants were investigated, and some were consequently planted (*Tagetes, Calendula, Tropaeolum, Pelargonium, Nicotiana,* and a range of herbs). Companion planting was an additional pest control measure. Although she did not wish specifically to kill off these insects, Christine hoped to develop a symbiotic balance in her garden that would eventually rule out reliance on any pest control, allowing the garden to self-regulate itself. She believed that in time the various measures she had adopted andthe impact of repellent plants would have the proper regulating effect.

As we worked, Christine shared her vision of a dream garden with me. Eventually she wished to have a garden that incorporated a range of species: a garden comprised

mainly of herbaceous perennials, evergreen shrubs and deciduous trees, but welcoming other life forms (plant types) and natives as well. She wished to have a natural balance in the garden, cut down on water through deep mulching and drip watering, and add organic ingredients to the soil to develop tilth and maintain and increase its fertility. She also foresaw her garden being richer in species over time, wanting to create her sanctuary of plants to which she could retreat. Time was not a factor for her. She worked when she could, working in with the cycles of the seasons; she did not have to race to get her ideal garden. *Part of the beauty of gardening is being able to watch how things develop in their own time.* Looking after the garden and developing it as her special place, was where she could feel *oneness with nature*, knowing that she had done one small thing to care for the Earth.

Christine admitted that her commitment to engage in stewardship practices may not be much in the bigger global picture of contributing to a better Earth, but at least she had made a start in living and practising stewardship in her garden. There was the continuing emphasis on the garden as a fragment, a tangible manifestation of the greater garden of the Earth, within which she could make a difference. Her final comment was:

> *I'm glad I participated in the action research… it has taught me more about gardening, about the type of thinking and practices that point to stewardship… it has increased my awareness of the need to live in a more balanced and harmonious way with nature, with what happens in the garden as a source of inspiration. It has me realise that what I do in the garden is just a small contribution to a greater awareness.*

2: David and Nikki – Light Footprint Gardening Practices and How to Influence Your Neighbours

This case study was conducted differently to the previous one. Practical aspects were minimal apart from some horticultural advice and suggestions, the demonstration of target and tip pruning, as well as dabbling in the garden with David and Nikki on numerous occasions. Meetings occurred every month, were lengthy (up to four or five hours each time), intense conversations and heated debates about a range of ecological issues and the role of stewardship in the garden and its broader applications. Discussed were issues about the 'ecological crisis', modernity, the role of the *almighty dollar*, consumerism and consumption, urban dwelling, and how to change the consciousness of people from a less exploitative stance towards the Earth, to one of an ethical relationship with the Earth. They shared with me their thoughts on how they engaged in *ecologically conscious and friendly practices* in their garden, with the view to being *good citizens and stewards of the Earth*. The case study was divided into two main sections: a general discussion of stewardship arising out of their mutual understanding of it, plus a description of their gardening praxis. I use the term 'praxis' as their gardening was a continual process of action followed by reflection.

David and Nikki were a gardening couple who lived in Mount Nelson and started their garden nine years ago. Mount Nelson is a hillside suburb of Hobart, in a dry sclerophyll vegetation zone with 666mm annual rainfall. Their garden was on a medium sized block, facing north, surrounded by a number of tall trees (*Eucalyptus globulus, ovata and viminalis*). The topsoil was thin, consisting of grey clay with

some silt – not very conducive to exotics, but able to sustain natives. The small lawn was a token gesture, a path around the house, normally patchy and covered in leaves, bark and twigs. Their garden type was native, incorporating 115 species, with predominant life forms being evergreen shrubs and evergreen trees. Over 50 percent of their species were natives: 56 Australian natives plus a further nine Tasmanian natives.

At the time of the participatory action research, both David and Nikki were unemployed. However when they had work it was often seasonal and took them away for periods of up to eight weeks, Consequently it was crucial for the garden to be self maintaining. When they did not work, they spent as much time as possible in their garden. Away from the garden, they took great interest in ecological issues and were well read and informed on a range of environmental, historical, political, philosophical and social topics. They were well versed in their understanding of stewardship.

David and Nikki loved their garden. It was an urge to be immersed in *the greatness and beauty of the Earth*. Their involvement in it was continual; their embodiment in it was exemplified by their meditating in it, walking around and noting the changes occurring in it on a daily basis, monitoring the growth and health of individual plants. They were keen to attract native fauna back into the immediate vicinity of the garden, as they believed much had been frightened away through recent suburbanisation and other disturbances. David and Nikki had had become enthused over the recent return of 'Ring Tail Possums', which had been absent from the area for a number of years. Nikki thought *it might be to do with more native plants and gardens appearing in the street.* The idea of attracting native fauna was a motive for having a native garden. They had retained some of the existing exotics and stated that

exotics had a place in the Australian suburban garden as it was difficult to let go of cultural and historical traditions. They also believed that *a conscious application of certain gardening practices is able to support the growing of exotics in gardens*. Although the majority of the garden was native, there was a vegetable patch towards the back, fruit trees alongside the eastern side of the house, and native grasses together with ferns along the south and shaded side of the house. Having always been keen on self-sufficiency and fresh produce in particular, growing their own vegetables and having a number of fruit trees was an undisputed must, and did not take away from their commitment to a native garden. They preferred produce that was organically grown and had originated from seed or seedlings that were non-GM.

Another attribute of their garden was that in the height of summer, sometimes being away with work for up to five or six weeks, the garden received little attention or water. Yet according to them over 95 percent of plants survived, including the many vegetables they had planted. Part of their gardening prowess and success lay in their conscious efforts to know the environment of their garden – their *special space* – by tuning in to all the elements, processes, and fauna and flora, and any other factors that affected their garden. By being aware, through observing, listening, experiencing and experimenting, and noting all that happened within the garden (to the plants, the soil, identifying mini-ecosystems and areas of moisture), enabled them to develop a rapport and insight into the space that was their garden. When they started gardening they set out to engage in practices that demonstrated responsible action towards *a better Earth*. David had parents who lived through the war in London and grew their own food; Nikki had parents who also grew their own food during the war in Germany before moving to Papua New Guinea and living there, employing the gardening techniques of the locals. Nikki and I were able to correlate our experiences

in Papua New Guinea and reflect on the local culture's understanding of the more than human world and the way in which they employed village gardening techniques that revealed a deep awareness and sense of respect for the Earth. David and Nikki also perceived themselves to be political activists in the area of urban environmentalism: reflecting on how people lived in the suburbs and how they related to the Earth through their gardens.

> *We live in suburbia… in Australia suburbia reflects the great Australian dream, characterised by (homes) gardens… gardens form the natural environment of the suburb… it is where nature is alive in so many ways… it is where nature can be experienced as wilderness, only people have to learn how to see and become involved in all those intricacies of the garden.*

David and Nikki adopted the term 'steward' by default. About two years prior to my involvement with them (March, 2004), one of their neighbours recognised and identified the particular way in which David and Nikki approached gardening and the special relationship they had with their garden. Lisa (their neighbour) said:

> *there is something about your garden, something about what you do in it and how you do it… its an intimate relationship… it reminds me of a story I read many years ago about stewardship and the Garden of Eden: you are like stewards.*

They reflected on this comment, contextualising it within personal concerns about global and local economic and ecological issues. By analysing their lifestyle, their commitment to simple living and combining it with their love of the garden, they then inferred that they may indeed be practising stewardship.

> *I suppose when we think of it, we may be stewards. We never thought of it that way… we only wanted to live a life that was respectful and conscious of the fragility of the Earth… of taking responsible action in our personal lives to bring about an awareness of working with nature and maintaining that balance, whatever it is.*

Such an avowal of humility is a strong characteristic of being a steward. When they spoke and shared with me over a period of months their embodiment into the garden, and when we spent time wandering through the garden observing and discussing this embodiment, the comment of their neighbour seemed justified. They spoke calmly and gently about their concern for a *fragile Earth;* they shared their understanding of stewardship discerned and distilled over the last few years – their thoughts illustrating a lengthy period of observation, reading, discussion and reflection into the significance of stewardship for them and for others wishing to make a difference. I interpreted their understanding of stewardship as an alternative lifestyle, a reflexive activity, provocative at times and signifying a prophetic element[65]. In ensuing conversations I noted that they, like other research partners, interwove their understanding of the garden with the greater garden of the Earth. Their crossing over from one to the other reminiscent of my understanding of the garden as being enfolded into the Earth and the Earth enfolding itself into the garden. They believed that the small size of suburban blocks was ideal for being able to practice stewardship, and then extending it: *what we do in our gardens is our involvement*

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[65] Brueggemann (1983) in his 'The Prophetic Imagination' presented an argument about the prophets of ancient Israel addressing and challenging a dominant order or crisis by then presenting an alternative vision. But in order to realise that vision it was necessary to empower the people.

with nature… how can you distinguish one from the other… nature is (in) the garden. Nature is the Earth… nature is Gaia.

David and Nikki's lifestyle resonated with a conscious living out of stewardship that was also expressed in their daily routines. They were people with simple tastes: simple tastes underscored by mindful attitudes and frugality. Their life and house was uncluttered. They did not own a TV, nor did they possess a car. They felt that having a car contributed greatly to pollution and the greenhouse effect and exacerbated the ecological crisis. They owned bicycles and recognised the value of public transport: *We walk, cycle and catch buses. We take our time. We have gardening materials delivered.* They perceived the presence of too many gadgets in the home as contributing to *a greater disregard for the resources of the planet, encouraging a consumptive mentality, and contributing to the stockpile of refuse in homes, backyards, tips and even verges.* They distinguished between needs (Maslow, 1970) and wants: *In modernity people no longer understand the difference between needs and wants. People should all be exposed to the Maslow's Hierarchy of Human Needs… we don't 'need' all those things we are told we do.* Similarly they disapproved of gardening centres, with their focus on selling *junk gardening products*, contributing to consumption and wastefulness: *[gardening centres] are places where uninitiated gardeners buy junk that is of no value to the garden, but manages to create waste and deplete the resources of the planet… it reflects this accumulative world in which we live… the world of things.* Conscious of the problem of wastefulness, and their own commitment to frugality they recycled and reused everything they could, wasting little and growing their own food.

Both demonstrated a commitment to justice, especially eco-justice[66], advocating that the treatment of the Earth and all living organisms (and soil and water) was an ethical imperative requiring reverential and respectful attitudes and behaviour. David made the comment that *justice is constitutive of ecological harmony… it's an ethical thing, a responsibility to the continuation of life that we share on this planet.* They remained conscious of the need to limit use of the Earth's resources, and of decreasing the human ecological footprint (Wackernagel & Rees, 1996): a concept they were familiar with having initially read the literature on it, but now committed to it. *For us reducing our imprint is part of what it means to be a steward. It is our expression of caring and showing reverence for the Earth.* Refusal to use any deleterious or chemical products was their commitment to not polluting atmosphere, geosphere or hydrosphere, and in this way expressing mindfulness towards 'Gaia'. They were familiar with both Carson's 'Silent Spring' (2000), and Lovelock's Gaia hypothesis (1987). They also observed that years after Carson wrote about the dangers of chemicals *we still haven't learnt, and in fact our whole planet reeks of chemical use.* They countered the *rampant and relentless attack on the health of the Earth* by their personal credo of making minimal impact *in their garden: don't poison but put back into the Earth twice as much as you have taken out.* They expressed disdain *over the subordination of nature,* and the oppressive element of wanting to control it by

[66] This project has not delved into issues of eco-justice, given the broad scope of justice as well as the contested meanings of it. In its place I have focused more on love and compassion as well as reverence, and mindfulness. For insights into eco-justice see Conlon, 1990, 1994; Hallman, 2000; Plumwood, 1998; Rasmussen, 2000; Ruether, 2000 and Skolimowski, 1993.

> *moulding it to fulfil the desires of modern industrialised countries in the pursuit of comfortable life styles. It is an imperialist attitude, reminiscent of colonialism, of the tearing apart of irreplaceable components of the Earth, to suit a whim or a fancy that is transitory: transitory in the eternal eye of nature, and nature's constituents*.

McDonagh (1986) wrote of this same 'human imperial stance towards the natural world, a stance deep and extensive'. Rather than working in tune with the Earth, creating, learning, and seeking wisdom from it, *Western capitalist countries flounder in the misinterpreted Genesis notion*[67] *of subduing, dominating and conquering creation… stewardship gone astray*.

David and Nikki acknowledged the practice of stewardship as one that would benefit the *common good,* the interconnected human and biotic good, which they saw as one. They were inspired by and empathic with the ideas of Leopold. For them the 'land' was a metaphor for the greater garden of the Earth. Nikki stated that for her *the land and all it contains is gift… it is not my land, but a gift given to us to be nurtured and treated with the deepest respect.* Any sense of human rights, or property rights should be subjugated to what is the common good, and what most benefits the greater biotic community.

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[67] Debate still abounds over the interpretation of texts in Genesis and the role these played in contributing to the ecological crisis. Lynn White's 1967 critique 'The Historical Roots of our ecological crisis', sourced our current ecological problems to the Christian Dogma of creation and original sin. Similarly in some academic circles, specifically theological ones, St. Augustine (354-430AD) has been singled out as contributing to an antagonistic view of the natural world: 'his fall-redemption theology, created the scandal of despising creation and the starting point for Western religions flight from nature' (Fox, 1983, 48).

> *Being a steward also means living with others, both people and other (sentient) beings and plants. It means recognising the good of the whole Earthly community… whether it's in the garden or the local community, or the whole Earth community.*

This was another aspect of what it they believed a steward should be. Understood within the context of stewardship the land becomes something held in common – therefore for David and Nikki

> *the removal of a community asset such as a blue gum in a neighbouring block should be a point of negotiation that upholds the principle of what is the greatest common good for the community. If something is a gift… that belongs to all… how can (some) humans treat it with disdain and ignorance… Why cut down a tree for a better view?*

Over a few years David and Nikki formed the habit of meditating in the garden.

> *We sit here on the veranda and contemplate the garden. We become engrossed in it, trying to understand how all the components interact, what the interdependencies are, how the garden is a manifestation of Gaia, a living organic whole. It's a means for us to approach gardening with a deepened sense of care, aware of the awesome responsibility to do the right thing.*

This practice of mindfulness was a conscious, continual daily act (when they were at home or out in the field they still practised mediating in the bush), one that heightened their awareness of their connection to the more than human world. *We admit that we are attracted to many Buddhist teachings and principles… one of them being meditation and through meditation we are enlightened to take the right course*

of action. As a result, their daily gardening activities were carried out as a sacred ritual. Their softly spoken demeanours often conveyed a peaceful and gentle relationship they had with their garden and with the Earth.

David and Nikki were counter-cultural; living as stewards was a motivating force in their lives. They knew and mixed with people of like kind, *spreading the word of ecological consciousness,* and creating avenues for people to take up stewardship. Some of their friends were already mindful of what stewardship demanded and tried practising it in their gardens. There appeared to be a common thread connecting these friends of theirs with themselves: a call to simple living, *to challenging the myopia of modernity, consumerism and exploitation.* David and Nikki spoke about themselves as being *edge people*, environmental activists who challenged the status quo by their lifestyle and in their promulgation *of right relationships with the Earth by simple living*. As activists they often incurred the ire of some members of the local community: *there is a need to discuss things that affect all of us… gardening and environmental issues. We try to do it subtly, reasoning, encouraging, but we are seen as greenies impinging on people's rights… sometimes we are a bit tough.* However this did not stop them in trying to bring about a change in consciousness in the way gardening was practised in their street. For David and Nikki *example, patience, time and wisdom are the guiding lights for change.*

David and Nikki saw the garden as *a practical therapy to counteract the dysfunctional influences of the world*. Kaplan & Kaplan, (1990, 241) speak of 'the restorative experience [of the garden] based on the idea that mental effort, coping with hassles, and everyday demands of living tend to fatigue one's capacity to direct inner attention'. For David and Nikki that dysfunction represented a disconnection

with the Earth, a primary dislocation with the more than human world. It was a dysfunction they concluded that

> *smacks of the trappings of post modernity creating an artefact out of nature, and because nature is an artefact, a personal connection with it is lost and hence any possibility of practising stewardship becomes almost meaningless.*

They foresaw the garden as a place to neutralise that dysfunction.

> *By becoming involved in the garden as something that is alive, with multiple gifts to receive… peace and calmness, well-being, relaxation, time out to engage with the Earth, and know your connections with something greater than yourself… this is a spiritual thing… a transforming thing.*

For David and Nikki the garden had to have a balance of working and not working in it. They acknowledged that gardening was a process, a matter of doing, and in the doing came a sense of accomplishment and pleasure. However sometimes they felt that being in the garden, sitting in it, becoming absorbed into it was a vital sensual stimulation, and an entry point to a conscious interaction with it.

> *Its not a matter of always 'doing' things in the garden, even though today we're always "doing" things – but being able to recognise the value of 'not-doing' but being. You have to learn to sit still… this is when you get the greatest insights into the myriad connections with the garden around you, and your responsibility in helping to maintain the delicate web of life.*

For both, their therapy was both doing and 'not doing' in the garden. Stillness and silence, and listening were vital elements in their understanding of the craft of gardening. *This stillness also enables us to better understand our role as stewards.*

Despite debate about the benefits and detriments of mulch, David and Nikki advocated continual but judicious mulching of the garden. Since starting the garden nine years ago they have continually applied a thick (100mm) covering of mulch at least twice a year. In keeping with their focus on 'organic' processes, and care for the Earth they noted two reasons for the application of the mulch. Improving the condition of the soil by increasing its organic content and building up the top soil layer was critical as their soil was so poor. By having thick mulch with a decent layer of topsoil, they knew that water retention would be at an optimum, evaporation minimal and that variations in soil temperature would be less damaging to plants. This was an important consideration for them given that they were often away for weeks at a time. They used mainly Eucalyptus mulch from the local council, *lots of bales of straw*, mushroom compost and home made compost. Nikki reflected on their use of mulch:

> *Now we have mulch that is 200mm thick, the amount of topsoil, loamy stuff, particularly in the vegetable patch is over 300mm… I know we have altered the soil composition, maybe it's a form of control… but isn't stewardship also about improving the object of our care?*

Wunderlich (2004, 87), refers to 'preserving and improving the property object'. He sees a steward as encompassing the role of a servant (cf. Dewitt, 2000), someone who through a continuous relationship of looking after 'creation' goes beyond preserving it, to improving it. Rather than object, in my development of an

understanding of stewardship I presented the garden and Earth as moral subjects with whom humans have a relationship. I interpreted David and Nikki's role as stewards who were in a relationship with a subject rather than an object: the way they expressed this relationship was more personal and intimate than a relationship with an object.

The effect of the mulch on maintaining water retention and decreasing water usage was remarkable. Two years ago (2003-4) when Hobart had extremely low rainfall for the months of October, November and December, and David and Nikki were away for almost six weeks, only one plant (a native) died, although some of their vegetable seedlings wilted but did not die. They had watered the vegetable patch sufficiently before they left, but could not positively attribute water stress to the mortality of the native plant. During their period of absence the weeds in the vegetable bed were particularly luxurious, and may have contributed to the survival of the vegetables. David and Nikki believed that proper mulching and composting, combined with a judicious, watering regime contributed to being a steward. They had also adopted the practice of under watering and training their plants to become used to minimal water for survival. Their message to gardeners was:

> *we have been mulching for years, we have come to know our soil and the conditions under which our plants thrive. We have experienced the benefits of mulching… its what people used to always do… giving back to the Earth what it has given to us: it works.*

They advocated that if more gardeners mulched their gardens continually, used water sparingly and watered correctly then one could have the most exotic of gardens, and keep it lush and healthy. *We have a dripper system that directs water deeply and*

directly to the roots of the plants… we also utilise all our grey water onto the vegetable patch, and the fruit trees. They also had a small water tank for water to be used on the garden, as a reserve for possible times of low rainfall and to minimise their overall water use.

Although the garden was an eclectic blend of plants, the majority were natives. David and Nikki believed that native plants were naturally suited to the environment. *We are trying to bring back native species and have more of a native garden, but we don't want to make it the bush. We like some exotics, as they give the garden a balance of species.* Over the years they endeavoured to plant more native shrubs, trees and grasses. Their garden initially had mainly exotics and they were not averse to them so long as watering needs were kept in perspective, and any with potential for invasiveness removed. To them *the garden is a moderate compromise, and expresses responsibility for the environment because of our practices and awareness of our role as stewards.* They advocated to their neighbours the benefits of growing Australian natives, in terms of water conservation and habitats for fauna: they also instilled the seeds for practices that were friendly to the Earth.

Over the years David and Nikki had been able to have their own vegetables and fruit. For reasons they did not know they did not appear to have major problems with the possums eating their produce, nor did they have any problems with pests. The vegetable patch had benefited greatly from grey water application, general and mushroom compost and additions of a range of manures. The soil in the vegetable patch was exceptionally rich, supporting not only vegetables but a vibrant community of weeds which were readily pulled out and used as green manure. Nikki stated:

> *We train our vegetables to thrive on reduced water… but we still reap the benefits of fresh produce, knowing it is free of additives. Growing our own food somehow connects us to a distant past where people had a deeper sense of the role of the garden in their lives as well as their role in the garden.*

Nikki often talked to her neighbours about changing their attitudes and ideas to gardening and thereby affecting change in gardening practices:

> *There is nothing like planting a seed in neighbours' consciousness; nothing like giving them a little nudge without them suspecting that you are trying to influence their practices, or making them feel threatened.*

In altering the attitudes and practices of her neighbours, Nikki's focus was not only the value of growing natives, but over-usage of water, use of chemicals, the positive benefits of composting and mulching, and implementing practices which showed care for the environment.

> *Mario, my Maltese neighbour who has been here for over 30 years, told me how years ago he was influenced into using synthetic fertilisers and pesticides as an aid to gardening. Well he doesn't do it now… I think I have spent the last three years teaching him about the dangers of chemicals, and even quoting from Carson's book. He was a jolly man and I could take such an approach with him but not others. He was open to learning from me.*

She also influenced another neighbour to decrease her lawn area, avoid certain exotics with invasive potential and avoid exotics with exceptionally high water

needs. She said she spent quite some time with this neighbour, Lisa, speaking about the value of taking time out in the garden. Being a committed gardener with sufficient spare time, particularly at this stage in her life when she was unemployed, Nikki also shared her gardening knowledge and skills with Lisa, but these,

> *I couched in the language of love and care and respect for the Earth. I had to do it that way. I couldn't just share my knowledge and skills without a caveat. I felt so compelled to present Lisa with a vision of what responsible gardening was. I didn't want to confuse her with what stewardship was, but I kept emphasising gardening as an activity of care for the Earth.*

Nikki was in contact with seven of her immediate neighbours and had sufficient success with changing some of their *(entrenched)* attitudes and practices. One of her successes included a neighbour who now regards himself as a native purist, but also had a vegetable patch for the same reasons as David and Nikki. Nikki saw herself as an *agent of change*, someone who was identified the signs of the times (*of inappropriate gardening practices, damaging to the Earth and our relationship with it*) through dialogue, friendliness, a 'bit of common sense', and focusing on the common good of the local (*biotic*) community. She believed that developing and maintaining a sense of community by focusing on the garden instigated dialogue that would eventually have a positive effect in changing gardening practices. *I hope that my influence will build a closer community, but a community with an awareness of the greater community of life.*

Towards the end of the participatory action research, David and Nikki developed the following list of gardening practices; practices they believed would lead to a greater

consciousness of *stewardship behaviour*. Fundamental to the implementation of these practices was:

> *an attitude of consciousness, and of nurturing. If we start with this mind set, apply it to the garden, then we can say that we care for the Earth and decrease our footprint… if we feel responsible for the well-being of Earth, then we will make these attitudes formative of gardening practices.*

1. *Practise meditation in the garden: it's good for the soul and good for working in the garden and implementing the right practices.*
2. *Talking to your neighbours at all times about your own gardening practices and your commitment to caring for the Earth.*
3. *Developing an air of trust and community mindedness about what is happening in the garden by focusing on the notion of common good.*
4. *Encouraging planting of natives suitable to the local environment, but not discouraging exotics. However there is teaching component here: that exotics may grow well without excessive reliance on resources, but certain practices need to be adhered to.*
5. *Alerting neighbours to the dangers of invasives that compromise habitats.*
6. *Water consciousness: through personal example and talking to neighbours, passing on information and skills about judicious water usage and conservation of water.*

7. *Grey water: Outlining methods of collection, and the safety of using it on the garden, especially for exotics and vegetables.*

8. *Water collection: installation of water tanks, building of swales, and the benefits of having a ponds in the garden, for frogs, birds, and humidity.*

9. *Composting: talking and researching with neighbours the value of composting and the range of materials that can be composted.*

10. *Non-use of chemicals: Chemicals are toxic to the planet and to all living organisms If we have coped without them 100 years ago, why not now?*

11. *Natural fertilizers: Recognising manures as natural ways of improving soil fertility and increasing organic content.*

12. *Learn to value the land – spread the gospel* [sic] *of Leopold and Carson; inform people of the human ecological footprint.*

13. *Proper target pruning:* (David taught himself this skill from books.) *Target pruning is a crucial skill to have because it enhances life and health and productivity of plants.*

14. *Continual mulching: the positive benefits of this being water retention, weed suppression, balancing of soil temperature, increasing soil fertility.*

15. *Natural pest control methods: keeping the garden as 'naturally balanced' as possible, by maintaining healthy plants and soil*

16. *Tree basins: The importance of these around exotic trees is crucial. Mulching around them as a means of water retention.*

17. *Soil enrichment and replenishment: The following practices are valuable: aeration, cultivation, addition of manure and organic matter, and straw.*

18. *Own propagation:* Neither David or Nikki were familiar with propagation but they advocated *the teaching of these skills as a way of ensuring maintenance of the genetic pool and less dependence on cultivars and GM products.*

19. *Seed collection: Collecting seed from the local provenance is best for healthy offspring in its own environment* (referring to seed from native pants).

20. *Productivity of garden: More people must be encouraged to grow their own fruit, vegies and herbs. It would take away from abusive and exploitative agricultural practices such as monoculture and broad acre farming, whilst at the same time providing fresh, non chemical and non GM food. Growing your own is liberating for the human soul.*

21. *Decrease in lawn area: Lawns may have a role, but they use excessive water and fertilisers. Keep a marsupial lawn or don't have one at all…Go to a park if you need to lie down on some grass.*

22. *Aspect of the garden: Determining what to grow and where according to sun and shade and moisture.*

23. *Faunal and avifaunal habitats: Encouraging dense growth for ground fauna, and flowering shrubs for avifauna.*

24. *Garden ecosystem balance: Look at developing a garden that has all its elements in balance: soil, water, moisture, ventilation, all plants, animals and insects, and humans. This is reminiscent of the GAIA concept.*

25. *Live simply, so all may simply live … Live knowing that the Earth is a gift, that you have to love it and care for it: live like a steward, and life will be less complicated, but more enriching and satisfying.*

26. *Know that what you do in the garden will be a gift for future generations. Pass on the tradition of cherishing the Earth.*

This list, powerful and exhaustive summarises David and Nikki's commitment to stewardship. Their sense of minimising the ecological footprint, and maintaining a vibrant and lived relationship with their garden, links in with the next case study whose focus is ecological values expressed through interconnections within the garden.

3: JIMMY AND FREDA – INTERCONNECTIONS, CARING FOR AND VALUING ALL LIVING THINGS IN THE GARDEN

This particular case study evolved because Jimmy and Freda became interested in my cultural background and the origin of my name. Jimmy as a retired engineer was also interested in my civil engineering experiences. It was they who suggested, insisted – at the conclusion of the initial interview – they would like to work with me in any other research that might be pending. We met regularly, discussing the historical and contemporary importance of gardens, and the role stewardship as a means to imbue greater value into the more than human world. Connections were made between the garden and the ecological crisis and ecological values. Jimmy in particular had an interest in ecological values (Skolimowski, 1993). During the course of the action research, Jimmy and Freda's visible commitment to and attachment to their garden made real a range of ecological values, particularly that of reverence (and the accompanying values of responsibility and frugality), respect and compassion for the Earth. Constant in our discussions were Jimmy's references to the interrelationships between living species in the garden: for him these relationships were a fundamental aspect of the life of the garden and required to be acknowledged through behaviours that demonstrated respect and love. I interpreted both their understanding of these relationships as having an ethical basis.

Their garden had been a focal point in their lives for some years, and since retirement they spent countless hours in it. Like many other research partners the *urge to garden*, as expression of the ecological impulse was made visible and tangible in both the materiality of the garden and our discussions. Each meeting was eagerly awaited and our deliberations were directed solely at how they view and work in

their garden, and the value they attribute to it. Often meetings started with a long tour through the garden where they elaborated their gardening practices, and described how these practices respected their relationship with the more than human world. Some practical, horticultural techniques were also demonstrated in these tours, coupled with a few mutual gardening activities. These gardening activities included helping Jimmy build 'bed protection fences' to stop mulch being spread on paths by blackbirds, sifting of soil to eliminate *Tradescantia*, and general weeding and pruning.

Jimmy and Freda were a retired couple in their 70s who spent most of their days working in the garden. They lived in Blackman's Bay, a southern suburb of Hobart, close to the coast though not specifically coastal, in a heath woodland vegetation zone. The annual rainfall was 601mm. Their garden block was large, almost an acre, sloping steeply to the south; the soil was grey clay on mudstone with significant amounts of silt in the run off areas. The garden was 24 years old and included much of the original native vegetation. In the time they had lived there they stated that no vegetation had been removed, but both native and exotic species were added.

Theirs was a production flower complex garden with 191 species of plants. The most common life forms were evergreen shrubs, herbaceous perennials and evergreen trees. The garden was an eclectic mix of plants, with no specific order or structure and with vegetable patches scattered throughout plantings of natives and exotics. The vegetable patches had been located in sunnier parts of the garden, as the garden was dense with trees and shrubs. Almost a third of their species originated in Australia; other common species originated from Asia, Eurasia and South Africa, and the Mediterranean and North America. Jimmy and Freda did not discriminate between native and exotic species: all plants were welcome in their garden, even weeds. Their

garden was a dense mix of greenery, with large shrubs and trees that attracted countless numbers of birds, native marsupials, and a bevy of frogs into the many ponds hidden throughout the garden. Jimmy and Freda were an example of gardeners whose gardening values and practices gave meaning to various expressions of the qualities of stewardship.

They stated that *in retirement we are comfortable, leading a simple uncomplicated life, thankful for what we have, but being ever so joyful that we can participate in the oldest human pastime.* Their garden was a central part of their life, dominating and determining their daily activities.

> *Our garden is a gift to us in our later life: we cherish and nurture it with the greatest care and love… gardening and planting is a compulsion for us; it's both giving and receiving. We feel joyous in the garden, like celebrating this wonderful gift.*

They stated that their garden was never static, its moods constantly changing, constantly welcoming:

> *The garden breathes for us and we with it; its an inspiration, an indulgence; it gurgles and flowers, its an artistic venture… it is a garden with no specific style or character, a place where chaos and order exist side by side, where rocks and soil are as much a part of the garden as the plants and animals, where a welcome is extended to all living things.*

Their garden was alive, it spoke to them, and they conversed with it. Jimmy mentioned how important it was for him to talk[68] to his plants and find out how they were faring.

> *It may sound silly, but I stand in my garden and converse with my plants. They are alive… goodness knows what sort of intelligence they have, but they must. I know because I feel that they respond to my voice, to my expressions of concern, especially when they look as if they are struggling.*

Being alive, growing and changing and a source of engagement with the more than human, gardens play a major role in people's lives. Jimmy and Freda believed that

> *if more and more people channelled their energies into gardening (rather than wars and pursuit of a materialistic lifestyle), people would put a high priority on the value of nature and the world would be a better place.*

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[68] Within many indigenous cultures belief in a numinous universe pointed to the possibility of communication between plants, animals and other paranormal forces. For example, in 'Sacred Plant Medicine' Buchner (2006) refers to shamans and healers talking with plants to discover medicinal properties. Other indigenous and animistic sources also attribute communication with plants. Contemporary study on the subject is met with scepticism by the scientific community, however adherents of New Age mysticism would argue to its possibility. The main proponents of communication with plants have been Fechner in 1848 (Nagel, 1997; Tompkins & Bird, 1989), Bose in 1900 (Tompkins & Bird, 1989) and Backster in 1966 (Backster, 2003; Tompkins & Bird, 1989 and Buchner, 2004, 2006. Retallack (1973) conducted experiments to indicate that plants responded to music. Today many nurseries play music to their plants; numerous people, either esoterically (New Age) inclined or not communicate with their plants.

Immersed in their garden they explored how gardening and being human in the garden created opportunities for a greater engagement with the more than human. Their embeddeness in the garden highlighted the 'innately emotional affiliation' of Wilson's (1993) biophilia.

> *Here, in the garden we have an opportunity to touch something that is sharing life with us even though at times we think it's not a part of us, but it is. Listen to the frogs and birds, tune in to the growing pains of my silver beet – see, it grows a couple of inches a day... We are part of a greater world, and most of us don't know it… It's here before us… we touch it.*

Jimmy was an ex-engineer and part time artist and his sense of creativity sometimes extended into the garden, even though it was *characterised by chaos and order*. He often painted in it, either the garden itself or some other subject. *Somehow the garden's tranquillity transports me into the subject of my painting… it inspires, gives me clarity of colours, direction of brush strokes.* His creativity and sense of co-creation within the garden had also given him an insight into being gentle with the more than human world of the garden, viewing all forms of life with reverence.

> *Nature is experienced in the garden, that sense of connectedness… being involved in the garden, is like coming back to a park, a primordial park, where we see life evolving like a flowing picture with complex interconnections… this is fascinating, and I have to treat it with deep reverence.*

The reverence that Jimmy spoke of was a reference point for them in their relationship with the garden. This relationship, between themselves and the life

within their garden, and the urge to continue it, was a common, continual theme in our conversations. The relationship had an ethical basis[69]: *I believe that gardening requires an ethical attitude… of behaviours that consciously engage with the life of the garden… it has to be a conscious thing that also describes our love of the garden.* The garden was a place where *we experience communion, a oneness of life with the breadth of life: we are a community.* That *community of life* highlighted the sense of *agape*, of being involved in the *co-creative activity of nature.* Jimmy and Freda's love of the garden translated itself into caring for the all the species in their garden and being responsible for their well being. The *community of life*, also intimated treating the garden, not as an object but as a subject, a subject of love: *it is a part of us… its not out there… it's hard to describe… as if we were holding hands with it, loving it gently.* The sense of community they spoke of also resonated with Leopold's understanding of the land community. Jimmy continued,

> *I think that if we love our garden and what it means to us, and how we are involved in it, then how can we not feel responsible for it… how can we not be caring and welcoming? Humans as moral, conscious rational beings have a profound responsibility towards nature's upkeep… to*

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[69] Cloke & Jones (2003, 200) refer to an ethical mindfulness when being involved with nature. They state that ethical mindfulness seems most likely to be sensitised at the meeting points of non-human agency and human moral concerns for the other… [and] to bear fruit in the recognition of human embeddedness in co-constructive relations with the non-human world. Bell (1996, np.), states that gardening practices need to be underpinned by an attitude of ethics. She even states that 'the whole environmental ethic is manifested in today's garden'. King (2003, 13), also refers to an ethics of the domesticated environment, and perceives it as being 'internal to the development of ecological responsibility'.

treat nature gently and lovingly, and attributing right value for all living things in the garden.

I asked Jimmy and Freda if they thought that their gardening practices – focusing on connections and relationships between species in the garden, and their sense of caring and welcoming of all species into the garden – was evidence of being a steward. Their response after a few weeks of thinking about it was:

Maybe we are stewards, not sure how to describe ourselves… we believe in caring for what we consider to be our inheritance. What we practice in the confines of our garden, is care for all species… for the life that is here… is this not an unspoken truth of what it means to be a rational, intelligent and spiritual human being? Surely this is an expression of the value we place on nature… it is sad when people treat nature as a thing, as having monetary value.

The sadness they spoke of referred to the economic value placed on gardens and the Earth, and what Jimmy described as *the cancer of consumerism*. They identified a range of values antithetical to being a steward:

materialism, consumerism, apathy and greed (highlighted by pollution and resource exploitation)… even eco-tourism is a prostitution of nature… things, have taken over from the fundamental value that we should accord nature… to survive we need to develop a set of ecological values that go beyond monetary terms… that ensure not just our existence but that of all creatures.

Jimmy and Freda decried the destruction of habitats, the extinction of species, poisoning of ecosystems, poisoning *the fabric of life* and the extensive dependence on fossil fuels.

> *How can we do this? If we are this intelligent species, the epitome of creation, how can we treat nature by denying the intrinsic value and rights of the plethora of organisms that constitute nature and that have every right to co-exist with us?*

It was within the garden that Jimmy identified a similar detrimental and destructive attitude to the Earth.

> *Even in gardens we can see the symptoms of this worldwide devaluation of nature and its accompanying attitude of arrogance. That's why I have little to do with garden centres or television shows that highlight a side of gardening with which I am repulsed.*

Their simple garden practices, with an abiding sense of care, echoed a primordial relationship experienced within the garden. Through their practices their relationship with all the living things in the garden reflected mutuality, reciprocity and deep respect. Those practices are as follows.

First, *all plants are welcome in the garden*. Natives and exotics, 'weeds' and succulents, and different plants from all over the world were welcome in the garden. Jimmy and Freda conferred the same rights to plants regardless whether they were less beautiful (in the eyes of other gardeners), or lacking in particular functions or usefulness, were weeds or had other 'unpleasant' characteristics. I identified their sense of welcoming with Ruether's (1992, 252) as 'kinship with all creatures', a

kinship that relates to ‘every other creature however noxious or insignificant to us: they are Earth born companions and our fellow mortals’ (Muir, 1916/1998, 139)

> *Nature does not discriminate… all plants are just there… The garden does not have to be beautiful or perfect, it can be interesting, captivating, different, overgrown. The garden is a conglomerate of plants, each with their own individual character, and each contributing to making the garden what it is, and each contributing to the biodiversity of the garden.*

Although Jimmy and Freda were aware of invasive environmental species (they had a few of them) they believed that *if a gardener was welcoming and in constant communication with plants, by maintaining a healthy ecosystem species would not become dangerous and invasive.* Perhaps this observation may be regarded as naïve, and yet there were more (from personal observation) environmentally invasive species in the gardens of the two adjacent neighbours. However as outlined below, they admitted that some species were a nuisance and needed to be eradicated. Generally they did not eradicate plants haphazardly, *because a garden is where we grow things, we want to fill the space of the garden with plants… it’s not a place where you pull them out.* If a plant was stressed they would tend and nurture it *like a child that is hurt*, talking to it, looking at it daily, or moving it to another spot. Most of the plants they had were acquired through going to markets, garden stalls, sharing and exchanging with some of their neighbours, but mainly friends.

> *We avoid going to nurseries because of the commercialisation of gardens and the profit motive that dominates the industry. If we share with friends, it brings that community aspect into gardening as well as a*

> *connection with the way people used to garden and exchange cuttings, seeds and ideas.*

As much as they loved and cared for plants they were averse to buying plants that were patented cultivars or hybrids. Jimmy was angry at the way plants had their *intrinsic rights abrogated by humans manipulating and taking advantage of them for monetary gain.* He found the notion of Plant Variety Rights and Plant Breeder's Rights (PVBs and PBRs) particularly distasteful, and ethically reprehensible. He did not consider that his stance towards avoiding patented cultivars was contrary to his commitment to welcoming all plants into his garden.

> *For me PVBs and PVRs are nothing more than theft, stealing property, putting a patent on plant and pretending it's your creation – which it isn't. Plants have been here longer than people… we have no right to change them to suit our own selfish motives and desires. If we look at evolution, species survived because if diversification… if they don't survive now it's because we have caused it.*

Jimmy and Freda's other fears were genetically modified plants and what they perceived as *their potential to decrease parent stock, weaken the gene pool and maybe contribute to decreasing biodiversity.* However they would not preclude looking after a cultivar or hybrid if it were given them, or if it occurred in an exchange of plants.

Second, *all animals are welcome in the garden*. Though a number of research partners spoke of welcoming fauna and making their garden 'fauna friendly', Jimmy and Freda, felt that the garden, if it was to reflect the greater garden of the Earth, had to include animals. The density and bushiness of Jimmy and Freda's garden created a

habitat for a large range of animals and birds. Nooks and crannies, old stumps and logs, hedges and ground-covers within the garden made it a sanctuary for countless numbers of marsupials. Birds were a conspicuous presence in the garden, with a dense middle canopy allowing for up to 30 identified species of birds to visit the garden. Jimmy and Freda were bird-watchers and planted species that were bird attractants: either natives or exotics. They admitted that blackbirds were a nuisance because of their tendency to scratch soil and mulch away from raised garden beds. However, meticulously, slowly, and artistically Jimmy had built tiny fences out of twigs and small branches around most of his garden beds, to ensure that the soil and mulch remained within the confines of the bed.

> *Why should I do something drastic to get rid of the blackbirds? They have as much right to rummage around in the garden as I do. Anyway, I enjoy making these small fences: it's creative and therapeutic.*

Their garden was often a chorus of frogs: Jimmy and Freda had built numerous simple ponds out of car tyres as habitat for frogs. Jimmy had managed to identify at least three species of frog. *Frogs contribute to an ecological balance within the garden, a welcoming vibrancy that seemed to be picked up by other animals.* Problems with pests seemed to be non-existent: *we have very little trouble with any of the common garden pests – perhaps it's to do with the sense of a balance of nature that prevails in the garden, or the frogs and birds.* I recall entering their garden for the first time and experiencing the vibrancy they spoke of. I was able to observe that the garden was alive, healthy and flourishing, dynamic, and supporting a diverse range of living organisms. There were birds chirping, blackbirds rummaging and scratching, bees and flies buzzing, dense plantings of shrubs and trees, and a range of sounds and smells associated with the garden that made me recall Gore's (1992, 221)

'vividness, vibrancy and aliveness of the living world'. That connection with all of life in the garden – with the more than human world –was something that struck me whenever I spent time with them in it.

Third, *water saving and storage techniques are central to good gardening*. During periods of rain water raced down a diagonal channel through the garden, from the highest point near the back fence, around a corner of the house and down to the lowest point to the right of the driveway in the front yard. In order to capitalise on this water and to minimise water damage and wastage, Jimmy built herring-boned water channels (similar to what is advocated in permacultural practices) away from the main diagonal channel. These herring bone drains directed water into ponds, depressions, swales and different sections of the garden. This deviation of water into various parts of the garden obviated the need for specific watering at different times of the year.

> *I found that when we have a deluge water comes pouring in from next door at one point at the top of the garden. I thought I should harness this water, and utilise it in a variety of ways in the garden. I've now had my water conserving system in place for almost fifteen years.*

At various times of the year, even in the heat of summer, areas of the garden were significantly wet. Large amounts of mulch and thick ground-covers helped in keeping the soil moist; areas of shade also decreased evaporation, and contributed to water retention in the soil.

Fourth, *eradication of some invasive species of plants was needed*. For Jimmy and Freda eradication of some 'weeds' was unfortunate as they wished to welcome and retain all plants in their garden. However they conceded that if they did not eradicate

three particular invasive species these would eventually take over the garden, preventing other plants from growing. These species were: *Delairea odorata*, *Tradescantia fluminensis*, and *Vinca* sp. All three had a habit of smothering other plants in the immediate vicinity, with the worst of the three being *Tradescantia* which was able to completely engulf a garden bed in a relatively short period of time. Jimmy used to pull it out by hand, dig up the soil with fork and spade and then sieve it meticulously. Sieving enabled him to *clean the soil, by removing any remnants* [nodes] *of the plant.* The 'weed' was then placed in plastic bags and solarised to take away the potential for further spreading once decomposed. The sifting of the soil allowed him to aerate it, and enrich and ameliorate it by the addition of compost, straw, manures and gypsum. Although the process of weeding and sifting of soil was long, arduous and time consuming, he expressed a common sentiment about availability of time for the 'real' gardener. W*e have all the time in the world… why hurry the process up, especially if nature is timeless and does not work to a timetable… why should we?*

Fifth, *the ecological value of elements of nature and the garden is to be celebrated.* In keeping with their emphasis on connectedness, caring and ecological values, Jimmy developed a rudimentary mechanism for assigning positive values[70] to practices and elements of the more than human world that contributed to the conservation of the Earth, and to the recognition of the responsibility to it through people's relationship with it.

[70] Kellert (1993) identifies nine values of nature as expressions of the biophilia hypothesis: these values underscore the ethical basis of the relationship of humans to the Earth.

I assigned negative values to practices and behaviours that exploited the Earth and failed to acknowledge the intrinsic value of nature. This value-based assessment depends on the contribution that a particular unit within the nature makes towards the viability of life on this planet. It's easy for humans to attribute an economic (dollar and negative) value to units of nature based on instrumentality. But what if we attributed an ecological value to the various units? If I use a forest tree as a primary example, then a one 'tree year' could be regarded as one 'eco' [logical] *unit. A one year old seedling apart from germinating has as yet done little to contribute to the life and viability of the planet but it still has potential. But a 100 year old tree would have greater ecological value attributed to it – 100 eco units – because in its lifetime it has provided 100 years of oxygen, absorbed 100 years of carbon dioxide and provided 100 years of habitat for a multitude of organisms. Unfortunately, this tree also had economic potential: a dollar (negative) value (based on its destruction), and the amount of timber or woodchips it could provide. How does one balance between eco units and dollar units? There is no comparison.*

When and what factors would allow humans to place life value ('eco') units on elements of the natural world without allowing them to be exploited and used for monetary gain. What values do humans place upon trees, or flowers, or vegetables, or soil micro-organisms, or the soil itself? What negative values can be placed on smoke stacks, or fumes emanating from plastic in house carpet, or chemicals used in the garden? I see a need for change, for a re-assessment of current

economic systems based on dollar values, and transforming them into ecological values. These economic systems are the main contributing factors to the ecological crisis.

In this assessment Jimmy and Freda offered a critique of those values they perceived to be dominant in contemporary society and contrary to their value system based on the reverence of the Earth and the species within it. These dominant values accompanied the critique of the commodification of gardens offered by research partners in chapter four. In presenting this assessment Jimmy and Freda wished to endorse their view that a relationship with the garden based on caring for and being connected to living things provided a means for them to be potential agents of change and influence others into valuing the more than human world.

The next case study builds upon the previous two, presenting gardening and stewardship as a spiritual way of being in the garden.

4: PHILIP AND JACQUI – SPIRITUALITY[71] AND CONSCIOUSNESS

During the course of the initial interview with Philip and Jacqui it became apparent that we shared a common link in relation to issues of spirituality and justice. This common interest not only established an immediate rapport and a defining of the researcher- research partner relationship, but the context for our work together in participatory action research. The ecological impulse and foundational and extended qualities of stewardship invigorated it with to a spiritual dimension, a dimension that called for further exploration through research partners understanding of it. Both Philip and Jacqui spoke of spirituality as a universal bond, but one devoid of any religious affiliation.

Issues discussed by Jacqui and Philip and myself, included human global justice, citizenship, eco-justice, consciousness of the more than human, and mystical and spiritual understandings related to gardens and the Earth. Our meetings took place every four to six weeks, always starting with some quiet time in the garden, observing and listening, followed by a meal during which time conversation about spirituality and stewardship occurred. During the meals a sense of *agape* was apparent not only through the sharing of the meal, but in the sharing of our thoughts and ideas about how interconnectedness of all living things, formed a *community of life* that was a spiritual way of being in the garden. I did not involve myself

[71] A cautionary note needs to be reiterated about the notion of spirituality, especially within the context of stewardship. A perusal of literature reveals that the phrase 'the Spiritual Dimension of Stewardship' is an institutionalised term referring to membership of certain churches and the requirements of tithing in those churches for their upkeep and continued mission of evangelisation, and discipleship (Lewallen, 2006, SLI, 2006 and UCC, 2007).

physically in the garden as with the previous cases. After the period of the participatory action research had elapsed, Philip and Jacqui remarked that they wished to continue being involved with me in my research. As such we still meet whenever we have time, sharing a meal, discussing the research continually exploring and discussing spirituality, stewardship, politics, religion, philosophy and ecological issues.

Philip and Jacqui were a retired couple in their late 50s. Philip, an ex-painter and home renovator, had also dabbled in various esoteric life occupations, including being a psychic and medium. Involved in the University of the Third Age, he considered himself to be a global citizen and a political activist. Jacqui had been a teacher and still considered that she had a role to play in altering people's thinking about how they relate to the more than human world. Like David and Nikki they also saw themselves as 'edge people', but with an emphasis on psychic phenomena which included, communicating with 'nature divas', talking to plants, and perceiving the garden to be a *spiritual space that extended beyond a physical world.* Philip described gardening as a *magical and mysterious involvement in the natural world: a shaman's communication with elemental nature.* This sentiment resonated with Berry's (1989, 84) comment about gardening 'as an active participation in the deepest mysteries of the universe', and Abram's (1996) understanding of the shaman of ancient cultures who lived on the edge of the human world and was the connecting fibre between humans and the more-than human world. Philip stated that his experiences as a psychic and his interest in world religions and philosophies of life had influenced his understanding and practices as a gardener. He believed that engagement with the garden was a spiritual encounter, and that the role of the gardener was one of a *spiritual overseer.*

> *I had for some time believed that the garden was a special place, a spiritual landscape, a connection with a transcendent realm, a vector pointing towards a universal consciousness. It has to do with the interrelationships that exist between all sentient beings, plants and organisms, nature spirits and non-organic things*.

Philip regarded spirituality as

> *a meta-arching energy that gives substance and expression to the encounters of people with the natural world of the garden, beyond the garden to the living Earth, and then to the cosmos… If you're open to it then* [spirituality is] *a normal thing that instils everyday experiences with a quality of viewing the world differently, of pointing to something beyond human consciousness.*

Their garden was situated in Howrah, a suburb on the eastern shore of the Derwent River, within a dry sclerophyll woodland vegetation zone, receiving 581mm of rainfall. Their block was medium sized, the main part of the back garden facing north (although half their garden was shaded by a neighbour's 30m *Eucalyptus globulus*). The soil was black, sandy loam in the back, and a mixture of loam and clay in the front. They had lived in the house for four years and in that time completely renovated the house and re-established the garden. Initially, when they moved in, the garden was almost non-existent, untidy, overgrown, unkempt and an eyesore to them. There were 126 species in the garden, the main types being herbaceous perennials, and evergreen shrubs. More common species originated from Asia, Australia, and Eurasia.

Being on the pension and with limited finances they created a garden that became the showpiece of their street and was featured in the local newspaper *The Sunday Tasmanian* (Grube, 2005). Jacqui did not like the 'showpiece' description of the garden and both of them shunned any notion of the garden being a commodity.

> *It may be seen as a showpiece, but we didn't set out to create a garden that was to be a status symbol. It's just that one of our neighbours was amazed at the transformation and before we knew it the newspaper people were here. We're not into image building or the garden being a fashion item.*

Their garden was a complex flower garden. They loved their garden, described as a 'Scented Cinderella' (Grube, 2005), with its colour, flowering plants, variety of leaf textures, fragrances, and plants that had what they perceived a *sense of freedom and mystery about them, connecting us to something greater than ourselves.* The garden was a focal point in their lives, *an object of love* that brought them *tranquillity, meaning and a deeper understanding of the Earth and the universe.* Similar to David and Nikki, Jacqui considered herself to be an activist but *a passive garden activist, there to influence neighbours through example, and interaction about the special spiritual role of the garden in people's lives.*

Philip and Jacqui were passionate gardeners, who described the garden as *a place of spiritual sustenance* and themselves as *connecting agents* (the shaman) *between people and the various beings in the garden* and life processes in the garden. Not only was their role in the garden as *agents of connection* but that *of co-workers with the great 'architect' of nature, and the universe*. Philip expanded on his description of the role of the shaman in the garden:

> *I think we need people who can connect between the natural world and the transcendent realm, the world of something greater than ourselves. Maybe part of the reason why we are faced with an ecological crisis, why the Earth is 'wobbling on its axis', is that we have lost that spiritual connection with the Earth… maybe by tuning in to the garden we can regain it.*

Similarly Jacqui mentioned to me that at times she felt *a calling to bring people to a spiritual awareness of the garden as something greater than ourselves.*

I interpreted Philip and Jacqui's (ecological) consciousness of the garden as a basis for spiritual consciousness with Skolimowski's (1993) thoughts on ecological values, consciousness and spirituality. Their understanding of interconnectedness and the sacredness of the garden made sense of Skolimowski's (1993, 35) set of ecological values: 'reverence from which follow, responsibility, frugality, diversity and justice'. Both perceived the garden as a spiritual sanctuary and gardening as a spiritual enterprise, requiring a certain disposition or consciousness when working in it. Part of that disposition was an attitude and practice of reverence evidenced in the relationship they had with the garden. Their consciousness was, *an organic consciousness that opens our eyes and minds to a new dimension, a new way of perceiving the Earth, of relating to it, and loving it.* This organic consciousness made sense of the practical mindfulness of Hahn (1992, 1993a & 1993b), Meister Eckhart's (Fox, 1980) wakefulness, and Spretnak's (1986, 41) description of spirituality as the 'focusing of human awareness on the subtle aspects of existence'. These descriptions of spirituality were evident in Philip and Jacqui's understanding of the spiritual nature of stewardship.

When I mentioned to them the foundational and extended qualities of stewardship they identified spirituality *as the glue binding all these qualities and interconnections.* Philip also suggested that the *transcendent aspects of the garden related to a common cosmological thread connecting all of life and living.* I interpreted his suggestion of a common thread of connection as encompassing Hildergard's 'viriditas' (Sweet, 2006): the life-giving force of nature as a generative and connecting energy.

The interconnectedness of which Philip and Jacqui often spoke was also exemplified by their practising Feng Shui[72] in the garden. They did not pursue any specific or popular garden designs when they renovated the garden. Nor did they have specific plant preferences: *all plants are the same to us, they represent one form of life, they connect with the timelessness that existed and continues to exist.* Their garden evolved according to how they 'felt' about certain plants, how plants 'fitted in', how the soil and water and rocks and air, contributed to this 'feel'. By incorporating Feng Shui into their garden they wished to achieve a balance and harmony which they believed heightened their awareness of the interconnectedness between them and the more than human world.

Philip and Jacqui believed that the practice of Feng Shui, embellished their understanding and relationship with their plants and the garden, particularly in the

[72] Feng Shui is the ancient Chinese practice of to the orientation and layout of elements of the landscape to allow for a harmonised interaction with the environment. Rossbach (1991) describes it as a mix of science and art, having both physical and psychic elements to it. She states that it is the 'key to understanding the silent dialogue between man and nature' (p.5). Feng Shui appears to be gaining popularity in the designing of gardens and recent publications attest to this growing interest: see Hale, 1998 and Wydra, 1997.

positioning of the plants. They compared the interaction with and caring of plants with bringing up and nurturing of children.

> *The plants are like our children and rely on us to do the right thing by them: they know what is right; we are like the soil for them, the anchor of their growth. Consequently we need to nurture the soil as well – in effect this means nurturing our own attitudes towards the Earth.*

Part of the nurturing was communication. During the course of many interviews, some research partners had spoken of 'communicating' (talking, listening, feeling, meditating) with their plants to inspire growth and foster well being. For Philip and Jacqui, being able to 'sense' how a plant 'felt' was important in determining how to care for it. Like Jimmy and Freda in the last case study, Philip and Jacqui often talked to their plants: they described their conversation akin to a meditation upon an individual plant. The merits of playing music to plants while engaged in gardening has been debated over time, but Philip and Jacqui believed that this was an important ingredient in the process of connecting with the more than human world. I suggested that scientific evidence seems to be sceptical about the notion of communication with plants, although numerous nurseries play music to their plants, and many people believe that music is beneficial for growth of plants. Philip responded:

> *talking to plants, meditating upon them and playing music are other expressions of our bond with a greater mystery. It's an expression of spirituality, of connecting and acknowledging interrelationships, of compassion… Don't you communicate with those whom you love?*

Communicating with plants was nothing extraordinary for them, *after all look at the Findhorn Miracle* (Findhorn Community, 1979)[73], *and evidence of ancient cultures communicating with the natural world.*

Philip and Jacqui's gardening activity focused on an awareness of the *myriad interrelationships of all living things,* and pointed towards that *something greater*, an expression they often used when speaking of spirituality. They said in the garden *we become so engrossed in our garden and practices that time stands still, but it's already evening and it seems as if we have been living in another world.* They were 'mindful' in employing gardening practices that were simple and did not seek to further compromise the balance of the garden. These 'organic and natural' practices they stated stemmed from their communication (and practice of Feng Shui) with the plants. The practices included *slow cultivation* of the soil noting *its structure and organic content*, selection of sites where plants *felt happy*, manuring, mulching and composting, some pruning and dead heading. They were concerned with practices of other gardeners, neighbours and friends, whose activity in the garden they observed as *resulting in further rupturing of the fragility of those interconnecting fibres that surround us*. For Philip and Jacqui, gardening was a commitment to organic earth practices. *We will always prefer organic, natural means of tending the garden… In time this may lead to a deeper spiritual connection with the Earth… But there is a lot*

[73] Forty years ago a small group of people moved to an isolated part of the northwest coast of Scotland, where amidst the harshest of environments, they were able to grow a range of plants from all over the world, including vegetables that grew to extraordinarily large sizes. The manner in which these grew and produced abundantly in the sandy and wind swept environment was referred to as the Findhorn Miracle. They attributed this miracle to communication and co-operating with various nature spirits and devas.

or work to be done here. For Philip and Jacqui gardening was a never-ending process, ongoing and changing, a deliberate engagement with the Earth, but always *pointing to something beyond the Earth.* They were grateful for the opportunity to be involved in the garden whereby *each moment of the day we watch the amazing miracles given to us by nature, through our entry into the world of the other and beyond… and we are an intrinsic part of it.*

Philip believed that an element of the spiritual relationship to the garden was a sense of justice. He told me that if you have a spiritual perspective then it *demands a right and proper relationship with the Earth similar to the saying 'Treat others as you would have them treat you'*. He understood this axiom as relating not only to humans but to all living things. *Justice and equality are as much an aspect of the natural world as they are of humanity. Justice is essential to consciousness and expressing compassion to all living things.* Philip and Jacqui spoke about *having a compassionate stance to the Earth: that's what justice is.* For example, for them the use of chemicals in the garden was *a disregard for the spiritual character of gardens, which includes compassion and justice*. I asked Philip and Jacqui to summarise their spiritual relationship to the garden and the Earth:

> *Gardening as a spiritual endeavour is listening to the living soil, to the Earth; to plants, to the elemental forces: it is a conscious act of compassion that connects all of life and extends to the greater other. It is a conscious act of worship… It is the humble knowledge that you are involved in something greater than yourself, and you have a responsible role in that.*

Consciousness of the relationships between all living things, expressing compassion, justice and a deep sense of reverence also made real the stewardship they practised. Philip and Jacqui saw their garden as a sacred space and gardening as a spiritual endeavour: *if we have been talking about stewardship then this is what it is… a spiritual way of being in the garden, in the Earth and in the universe.* One of their final reflections focused on mystery. *Although the universe is still mystery we will never fully understand, a spiritual understanding of the garden, and the tangible way we interact with it, makes us feel comfortable with that mystery.*

5: COOPERATIVE STEWARDSHIP

Cooperative stewardship was an additional and unintended case study, one that I decided to pursue towards the end of the gardener interviews and garden surveys. My curiosity had been aroused after an initial interview with a gardener in the coastal suburb of Cremorne. His commitment to *ecologically sustainable practices in the garden* prompted me to ask him if he was interested in the participatory action research. He declined my invitation because of time constrictions, but suggested that a group of his neighbours may be interested. He told me this group of five gardeners were concerned with *local conservation issues and involved in sharing aspects of their gardening*. Initially I was able to interview three of the five but none of them wished to participate in the extended research. They admitted that they were a group of gardeners experimenting with and participating in a form of community gardening. At a later date I met one of these five gardeners at a function, and after general conversation he expressed interest in sharing with me the cooperative gardening project. Instead of an extended time frame, I was able to organise two whole days over a couple of weekends where I spent time with these five gardeners, exploring their project.

Cremorne is situated on a narrow peninsula east of Hobart and is surrounded on one side by a lagoon, the other by ocean. Rainfall is 572mm per annum. The area is subject to harsh environmental conditions. The soil is pure sand, lacking in any nutrients, incapable of moisture retention. It is often whipped up by confused winds, causing havoc to gardens. The abundance of sand in the suburb causes it to heat up intensely in summer, the reflective heat damaging plants, particularly susceptible exotics. The surrounding salt water combined with sea spray also has a detrimental

effect on most plants. Local vegetation consists of species that are tolerant of the conditions. Few trees inhabit the landscape, and those that do are relatively small in size. Gardening here is not an easy task, yet from interviews and observation many gardeners in Cremorne have worked extremely hard to establish and maintain a garden.

The group of five gardeners by working hard in their gardens and being in constant communication with one another were determined to ensure that their cooperative project succeeded. Initially I was interested to discover what qualities of stewardship were expressed in their cooperative gardening project. Tom the instigator of the group told me that they were interested in a number of issues, though he did not refer to stewardship.

> *Cremorne is a tough place for gardens, so we want to increase community awareness of the value of growing natives. We want to share our gardening resources, including skills, knowledge and materials (gardening tools) and plants, seeds and cuttings. I think we're all concerned about conservation, and we're dismayed at way the planet is being abused on a grand scale. We thought doing something together may be a token gesture that we care for the health of planet.*

This case study demonstrated strong practical elements. These five gardeners, who described themselves as *doers and sharers of experience*, were more concerned with a pragmatic approach to gardening than with discussing conceptual issues. When I asked them about how they formed this cooperative gardening group, Paul replied:

> *We just clicked. We don't know how it happened but it did, and it hasn't been that difficult at all. We have a few common interests like surfing*

> *and the coastal care group, and we're about the same age* [about 35 to 44]*… But apart from that it's not as if we live in one another's pockets.*

Tom added that the purpose of the group

> *is to start small, do our thing in the space of our gardens and hopefully influence others. My motto is 'Think globally, act locally*[74]*'. Don't know where it comes from but it's our motivation here. Of course some of our neighbours dislike what we're doing and have called us 'bloody greenies'.*

Geographical proximity of their houses was one reason for the formation of the group. Three houses backed on to one another and the other two were within 100m of the first three. A few years prior to the interviews (December 2003), two of the members of the group met whilst surfing on the beach and started to discuss their gardening difficulties and successes. Being aware of the difficult environment and observing how well Australian native species were coping with the conditions, they set out to help one another develop native gardens. Experimenting with hardy Tasmanian native plants, and also ones from the mainland, they started to create their own native gardens, whilst slowly ridding their gardens of exotics that were unsuitable for the conditions. Within a short period of time three new neighbours moved in, friendships developed and a common interest in conservation and native gardens sparked the growth of the cooperative.

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[74] This adage was coined by Dubos in the 1970s (Ward & Dubos, 1972) when he was adviser to the United Nations Conference on the Human Environment. It refers to addressing the problems affecting the environment due to environmental change. Over a number of years it became a catch cry for people wanting to act responsibly in the local area in order to solve global environmental problems.

As a result of my short involvement with these five gardeners, their practices gave added weight to the foundational and extended qualities of stewardship. Their focus on and concern for the integrity of ecosystems, of respect for the Earth's resources, and not being wasteful, were primary in their relationship with their gardens. Their sense of collaboration in their gardening endeavours added a new dimension to stewardship that highlighted the possibility of starting small and influencing and involving others in the caring for the Earth through the fragment of the garden.

According to the garden typology developed in chapter three, only one of the gardens of this group of five was a native garden – the others were classified as coastal gardens. However a perusal of the species composition of the gardens of these five gardeners indicates that about 30 percent of the plants in their gardens were natives. The life form of other species in their gardens correlated with plants that were hardy, required little water, were generally of low maintenance and came from warm temperate areas like the Mediterranean and South Africa.

The process of converting their gardens to native gardens was slow: they were not gardeners who wanted to 'rip' everything out and start from scratch. Despite the unsuitability of a range of exotics, their attitude to plants overall was one of acceptance and care.

> *Sure we could get rid of all of them? But they are reminders of our cultural heritage… I mean they're plants and if you like plants you look after them… but if they showed signs of stress… we'd remove them and replace with natives* (David).

One member of the group, Al saw himself as a native purist: *I only want to grow natives… collecting seed from the local provenance* [local coastal bushland] *and my*

garden for propagation purposes, is primary to my pursuit of a native garden. Tom and Al were also committed to conserving 'rare and threatened' Tasmanian natives (see chapter three) and made a point of collecting these and having them in their gardens. *Kerry* [his partner] *and I both feel morally obliged and committed to trying to preserve these species… you never know what out little effort might do in the bigger picture* (Al). This sentiment of Al's echoed Rolston 111's (1985, 718), about the ethical consequences of not looking after and destroying endangered species: 'destroying species is like tearing pages out of an unread book, written in a language humans hardly know how to read'. The other three members though very interested in natives did not show the same level of committment to preserving endangered species. However the value of growing Australian natives was their way of emphasising a commitment to minimising dependence on resources.

> *Decreasing external inputs, less water usage, lower maintenance requirements, understanding the environment all contribute to preserving resources, and respecting the ecology of the place* (Paul).

Tom and Al had a botanical familiarity with Australian natives and knew the cultural requirements of natives. They assisted the others in establishing more natives in their gardens, sharing skills and knowledge. All five had strong views about invasive species and made an effort to alert the local community about the dangers of them. *You look around the beach area and you realise more has to be done to alert the community to the smothering effects of invasive species* (Al). Sharing of native cuttings and seed collection was a priority. Though not averse to buying plants from nurseries, they expressed concern about nurseries overcharging on plants.

> *Nurseries do overcharge and often plants are not hardy enough to survive in our conditions, so if one collects local seed and propagates cuttings from the local area then there is a greater chance the plant will survive* (Tom).

Tom and Al, more familiar with propagation techniques than the others, had small hot houses available for communal use.

In Tom's backyard was a large communal 'bio-pit' shared by all five research partners. This pit was like a larger version of a compost heap: it was dug into the ground, had a base of old concrete slabs, a wooden framework dividing it into three sections and normally covered in thick, black plastic. Its capacity appeared to be three, if not more, cubic meters. Proximity to one another allowed them to utilise a sizeable pit in one backyard rather than wasting space, time, energy and resources having five separate ones. *Why repeat the same in our own places? We don't have far to go, we barrow in our materials to the community pit, and we share the compost* (Paul). The pit was as much an experimental venture as well as one with a practical component. Though there was nothing novel in this idea of the 'bio-pit', the possibility of a group of people contributing to and sharing a gardening practice added a community dimension to stewardship. The group experimented with all sorts of house and garden waste materials that had the potential of being composted. Little wastage occurred, and all five were intent on recycling and reusing as much as possible.

> *I remember reading Rodale's* (1980) *book of 'Organic Gardening' and thinking that the insights there enthused and provided me with a basis for the type of gardening that I wanted to engage in. Out of this arose*

> *the idea for a large communal bio-pit and experimenting with all manner of compostable materials. We try to reuse and recycle as much as we can* (Tom).

Mulching materials were shared, either from mulch they created or from the import of twenty cubic metres of mulch from tree lopping businesses. They used newspaper, cardboard and other organic materials as preventative measures against the constant movement of sand. Straw and other organic materials were used to enrich the sandy soil, particularly where four of them had vegetable patches and these required nutrient rich soil.

> *We would like to build up the soil, but we know it's going to be an almost impossible task… As long as the vegies are happy and we have our fresh produce. We don't want to engage in using chemicals to better the soil, so compost and organic matter is crucial* (John).

All five were committed to not using chemicals. *How can anyone compromise the integrity of the soil, of ecosystems?* Both Tom and Al regarded Carson as a pioneer in alerting people to the detrimental effects of using chemicals on the land. *We also wonder why it still persists… how long will it take humanity to realise we are stuffing the planet up?* The group was conscious of water as a limited resource and had installed dripper systems to water the garden. Drippers tend to direct water immediately below the crown of the plant and onto the roots, unlike certain other watering techniques that are wasteful in dispersing water over a larger area. Al had very little water requirements as his garden was covered in native grasses, ground covers and shrubs, and these with natural mulch (which he had collected around the beach and street) seemed to maintain a level of moisture in the soil. They also

experimented with training plants to survive on less water (a practice employed by other research partners) by decreasing the amount of water being applied over time. Paul having learnt more about gardening from other members of the group commented: *if you can bonsai plants, then you can train plants in numerous other ways including less water uptake.* Three of the gardeners also used grey water in the garden, and three had water tanks.

Since the time when the group realised the possibility of this cooperative style of gardening they decided to share their tools in order to cut down on resources. Little grass grew in their gardens, so one mower between the five of them was sufficient. They purchased a communal mulcher, which was in constant use feeding the bio-pit and mulching the gardens. Other tools they shared as well: crow bars, a chain saw and brush-cutter. Tom, the principal instigator of the group stated:

> *Why buy things that are for your own personal use, especially larger gardening equipment, when you can all put in and benefit from the sharing. It cuts down on costs and does not contribute to continued exploitation of resources through consumption.*

Most had their basic manual tools, but if they didn't they could always rely on going next door and borrowing. I perceived an unspoken sense of trust between them that made me wonder how this cooperative gardening project worked. From discussions with the group it appeared that they had developed a friendship based on similar interests. They were interested in surfing, and being close to the beach became involved in coastal care. All shared an interest in environmental issues and four were teachers who emphasised teaching about the environment. There was a strong commitment to the group members and to helping one another. *It seems that our*

common interest in gardening, natives and ecology issues, has also had the effect of developing trust. But then we are all good friends (David). They shared their cuttings and plants, and normally purchased natives from the 'Plants of Tasmania' nursery in Hobart.

A first two members of the group were initially active in the local coastal care group, looking after coastal vegetation and involved in coastal rehabilitation. They considered this involvement as crucial to developing consciousness in the community about conservation of fragile coastal ecosystems. They had influenced the other three members into becoming involved. The five group members, like David and Nikki in a previous case study, often spoke to neighbours about the benefits of growing natives, particularly given the harsh conditions and the lack of water. They dropped subtle hints about gardening practices that had minimal impact on resources, and were vocal in their efforts to diminish water use in the area. They tried to develop an awareness of the benefits of cooperative gardening and sharing, though with limited success. They also managed to incur the ire of some of their neighbours who thought these five were pushing their 'green agenda' onto the community. *We're doing this because we believe in it… We invite others, but they can decide if it's right for them… I don't think we're being overly pushy.*

The experience of this group involved in cooperative gardening, presented a model for the wider community. This model of like minded gardeners involved in cooperative gardening, influencing and supporting one another, provided insights into stewardship being practised by a community of people. Their working together, experimenting, starting out small, trying to influence others, provided an inspirational perspective for implementing stewardship gardening practices at the local level. This local garden as a fragment of the Earth, in which the Earth is

encapsulated and revealed provides a conduit through which this implementation can be affected globally.

7 TO BE A STEWARD AND TREAD LIGHTLY IN THE GARDEN (OF EARTH) – THOUGHTS IN CONCLUSION

In this final chapter I set out to do three things. First, I offer a restatement of my research methodology, design and questions. Second, I seek to answer my two research questions by providing a summary of the salient findings of the research. This summary brings together philosophical insights about stewardship, the personal perspectives of gardeners towards stewardship, and the gardening experiences, attitudes and practices of gardeners. Last, I pose some questions that may be taken up by others wishing to explore gardens, stewardship and ethics.

REVIEW

The primary focus of this project was to explore the significance of stewardship as an ethical impulse manifested in contemporary suburban gardening in Hobart. The foundational premise of the project was that an ecological impulse motivates people to engage with the more than human world. The local suburban garden was presented as a site from where the ecological impulse may be explored. This foundational premise underscored the twofold question being posed in this research. Is there evidence to suggest the existence of stewardship in suburban Hobart gardens and gardening practices? And if so, does stewardship extend from the garden to inform a wider ecological impulse and to what effect? The study identified significant gaps in academic research on stewardship as a contemporary expression of the relationship

of suburban gardeners to their gardens. Little attention has been directed to stewardship as a way of being in the garden and as an approach to practices of gardening. Similarly, little if any consideration has been given to the practice of stewardship in the garden as a means of informing a wider ecological impulse: an impulse that may be directed to addressing the ecological crisis. Pollan has positioned the garden as a starting point to larger environmental ethic. However his suggestion has not been analysed in detail and, as a time honoured way of gardening, stewardship did not emerge as a theme in his thought.

In order to address these two questions, I examined the theoretical bases of stewardship and correlated those to the understandings and experiences of suburban gardeners in Hobart. The research design chosen involved a mixed method approach. Literature was explored for antecedents of stewardship and, together with insights from ecological science and philosophical thought, these antecedents were the basis for developing a more robust and thought-provoking description of stewardship. Conducting audits of 134 gardens for species composition and richness enabled me to present an overview of Hobart suburban gardens. A typology of these gardens was developed from the audits and descriptions of the external characteristics and structure of gardens were generated. Species composition and richness as *critical material evidence* facilitated my examination of the rhetorical and practical engagements of gardeners with their gardens, and was informed by insights into their personal attributes, world views, values, and motivations for gardening. Conversations and interactions with research partners and their gardens were the primary modes of collection of material on gardens and gardening practices. I selected 67 gardeners from the larger sample with whom I conducted in-depth interviews. Theses interviews focused upon such themes as gardens, the relationship

of people to the Earth, ethics and urban ecology, and enabled me to collect information on research partners' values, attitudes and attachments to gardens and the Earth, and on their gardening practices. A thematic analysis of the interviews had two main foci: the attitudes of gardeners to gardens and gardening, and the practices arising out of these attitudes. These interviews were also a portal through which to explore the degree to which gardeners were aware of the tradition of stewardship: either explicitly or implicitly through the various gardening practices they employed in their gardens. Five groups of gardeners were chosen from 67 interviews as case studies to further explore manifestations of stewardship in their gardening attitudes and practices.

SUMMARY

The research findings show that in themselves gardens are rich social, ecological and spiritual constructs. The ecological impulse as a foundational premise of the thesis was expressed through gardeners' embodiment into the space of their gardens. Their embodiment in their gardens was linked seamlessly to their sense of connection to and involvement with the Earth itself. For many, the garden as a minute representation of the Earth was a deeply felt, intense and lived experience of engagement with soil and plants. For research partners the garden, in all its concentrated and deeply familiar specificity, became the place in which the Earth itself was no longer and abstraction, but a vast whole, evident and felt and loved in each personally experienced garden. The garden was the space from which research partners shared their love of gardening and of tending the planet.

A striking feature of my interaction with research partners was the breadth of their knowledge, wisdom and experience. They were grounded in their gardens and

passionate about them. This groundedness and passion was expressed through the time, effort, and commitment they put into their gardens. It was evidenced in rough and soiled hands and finger nails. Narratives about their gardens abounded with descriptions of how gardening was an all consuming encounter, an encounter couched in love and reverence. Their gardening practices were gleaned from years of experience, and from insights gained by observing the interactions between the various living elements within the garden. Part of that experience, crucial to their engagement with the garden was informed by an openness to 'their own and nature's contingency' (Pollan, 2002, 207). These practices echoed a lived wisdom about gardening; a wisdom that included a deep concern and love of the greater garden of Earth. Some had significant botanical, medicinal and culinary knowledge of plants; others were well versed in ethical concerns about the environment, reflecting an awareness of the ecological crisis. Others were well read on environmental thought and pursued an interest in nature writings. Some manifested a deep personal responsibility for the health and well being of the Earth through their practices in the garden. For some this ethical stance was highlighted in their speaking about being *teachers and agents of change* about stewardship gardening and deep reverencing of the Earth. This particular stance of being *agents of change* highlighted the influence of a sense of garden stewardship in sustaining a wider ecological impulse to address environmental problems and repair the dislocation between humans and the more than human world. A few research partners mentioned the communication bridge that gardens build between people and within communities; one had mentioned that my work on gardens *forged a connection between the world of practical gardening and academic perceptions of it* (Peter).

The gardens themselves were rich in species, different in individual structure, with tangible evidence of the efforts gardeners went to in order to create and maintain their gardens. A sense of commitment to the craft of gardening and to the important role gardens have for people was summarised by Liz: *I hope my garden will be a repository of biodiversity for the future and an example of the continuing influence and importance of gardens for health, beauty and survival for all.* Research partners indicated that gardens will live in memory, and persist as an experienced reality and way of being *in* the Earth for generations to come.

The audits of gardens for species composition and richness combined with their morphological characteristics provided *critical material evidence* for exploring gardeners' understandings of gardens, practices and stewardship. The typology of gardens resulting from garden audits revealed the certain investments in the garden as a site for self-expression, imagination and creativity. In choosing different types of plants from all parts of the globe, research partners created various styles of gardens that reflected their values, motivations and attitudes.

Discussions with gardeners about those values, motivations and attitudes, pointed to stewardship as a lived reality and way of being in the garden and in the greater garden of the Earth. The lived reality and way of being was evidenced in their gardening practices. Susanne encapsulated that connection: *each garden is a little earth, and the earth is a big garden.… what we do here affects that bigger garden.*

CONCLUSIONS

As I have presented it, stewardship is an ecological impulse informed by three ethically-oriented thinkers whose work on the land ethic (Leopold), the Gaia

hypothesis (Lovelock) and the biophilia hypothesis (Wilson) I have interpreted as integral to developing my understanding of stewardship. The foundational premises of stewardship gleaned from biblical and indigenous sources, are ones that have time honoured traditions of conscious and caring interactions with the Earth. I also embellished these foundational qualities by adding others, mindfulness, immersion, reverence, love and compassion and celebration. I elaborated stewardship as a lived experience with the garden as a moral subject. In this section I discern nine themes that highlight this stewardship ethic emanating from the gardeners and motivating their wider ecological impulse. Beyond these nine themes I bring together concluding insights gleaned from this opus.

First, the commonly expressed sentiment of gardening as a natural human tendency was described variously as *an innate thing… the urge to garden… a natural thing to do.* The urge to garden, to be involved with 'earthiness' and *to feel the soil* pointed to a relationship with the garden and Earth, which research partners identified as *a connection of primordial origins*. This urge made sense of the ecological impulse as an ethical response to the more than human world; the world which research partners identified as one they shared with other living entities. The urge to garden substantiated elements of the foundational, biblically derived qualities of stewardship, of tilling the soil, cultivating the garden, and 'keeping' it to pass on to others.

Second, *the urge to garden* was made tangible by research partners' descriptions of becoming immersed into the space of their gardens. Mindfulness and consciousness underscored the urge to garden and to become embodied in it. Sensual immersion was variously described and experienced by research partners: it took on overtones of love, attachment, compassion and celebration. Gardeners delighted in the gifts of

the garden: beauty, aesthetics, fecundity and therapy. Immersion also involved noting the intricate interdependencies within the garden: observation and learning from these dependencies and natural processes, and noting seasonal cycles. Research partners identified with a cyclic model of time, preferring to *allow nature to do her* [sic] *thing in her time* (Cliff). Being present in the moment and being focused on a specific task reflected a conscious and deliberate embodiment of the gardener into the garden and engagement in practices.

Third, the *urge to garden* had corollaries in research partners' identification of the various influences upon them to garden. Apart from continuing what they perceived to be a traditional way of engaging in the more than human world, significant people and experiences contributed to this urge to build relationships with the garden characterised by care and love. Commitments to cultural traditions and practices also compelled research partners to maintain certain traditional gardening practices.

Fourth, a common distinction was made between 'real' gardeners and those whom they perceived to be *fashion conscious, status driven and not really involved in their gardens in a meaningful way* (Bill). In research partners' understandings and experiences, 'real' gardeners formed an almost unspoken fellowship of gardeners involved in the craft of gardening: they *knew* what it meant to be a 'real' gardener. By immersing themselves into that craft, 'real' gardeners shared similar values, practices and ideals. A strong sense of ownership of their practices as a way of caring for the garden was a prominent feature of being a 'real' gardener. They understood themselves as tenants of the garden in the sense of a 'keeper' looking after a piece of land by being engaged in the garden as a way of life, and as a relational way of being between humans and the more than human world. I interpreted research partners' perceptions of being 'real' gardeners, as manifestations of a sense of stewardship.

Fifth, research partners made repeated references to ‘natural and organic’, and ‘earth friendly’ gardening practices. In referring to the various understandings and manifestations of these practices, research partners made tangible the foundational attributes of stewardship: ‘caring, nurturing’ for the garden by engaging in responsible behaviours. Organic practices focusing on organic matter in the soil and maintaining the health and viability of the soil to be productive, were ones that signified a deep care for the organisms and processes that occurred in the garden (of Earth). They also highlighted the moral responsibility to engage in behaviours that reflected this care. These ‘organic’ practices were expressions of mindfulness, reverence, love and compassion as significant relational qualities of stewardship. They were also expressions of a consciousness to ‘pass on’ a healthy garden to future generations.

Sixth, research partners’ awareness of the interdependencies and interrelationships between themselves and the organic and non-organic elements of the garden underscored elements of stewardship as this relational way of being and experiencing the garden. The garden was the space where interactions between the human and the more than human were tangible and real, manifested through intimate, sensitive and passionate encounters, occurring in many moments of mindful engagement with the garden. This relationship, expressed often and in various forms, was couched in terms of the love, compassion and reverence research partners held for their gardens and the Earth.

Seventh, research partners gave expression to a deep sense of the spiritual nature of their interactions and relationships within the space of the garden. Skolimowski’s (1993, 20) ‘ecological consciousness is the foundation of ecological spirituality… carrying with it a set of ecological values’, reflected research partners’ sense of a

spiritual embodiment in the garden (of the Earth). Some spoke of the experience of the garden as one where they encountered 'the other', as something beyond the realm of everyday experiences. This experience is mentioned by Berry (1989, 3), when he writes of 'gardening as an active participation in the deeper mysteries of the universe'. For some research partners this spiritual connection emerged from their recollections of the biblical 'Garden of Eden'; for others it was the specific act of gardening, of being plunged into the soil and experiencing those *primordial connections*. Various musings by research partners of celebration in and of the garden (of the Earth), also emphasised the spiritual nature of gardening and stewardship.

Eighth, in critiquing the commodification of gardens and the garden of the Earth, research partners appeared to be advocates of the need to treat the garden as a moral subject. This critique reflected broad global concerns that informed the wider ecological impulse. Those wider concerns were about issues as diverse as deforestation and the sale of land, chemical use, eco-tourism, resource depletion, and the impact of human activity on planetary processes (and particularly destruction of habitats and subsequent species extinction). This critique also reinscribed the garden as a microcosm of the Earth: deleterious practices in the garden mimicked similar practices and attitudes to the Earth as a whole. At the local level research partners perceived suburban gardens as contributing to the ecological crisis.

By being made a site open to exploitation by market forces, the garden had become a commodity and a source of financial profit; a status symbol; a site for instant gratification characterised by resources depletion and wastefulness. Most research partners sought to engage in practices that countered this emerging culture of

commodification because it represented to them values contrary to the ecological impulse that extended beyond the particularity of the garden to the Earth.

Last, over the 67 interviews and within the context of short discussions with gardeners during the audits, stewardship as a manifestation of the ecological impulse was notable in research partners' engagements in their gardens. Among research partners the sense of stewardship incorporated some if not most of the qualities of stewardship as I have described them. Research partners explicitly or implicitly, articulated and practised that sense of stewardship. That sense referred to their embodiment into their own gardens, and to their embodiment *in* the Earth through their gardens. A cogent and definitive expression of stewardship revolved around relationship. For research partners gardening and interacting with the more than human world was a relational way of living and being in the garden.

What specifically have I learnt in writing this thesis? This thesis has grown out of my love of gardens and gardening. It began by my drawing on a lifetime passion and experience of being a gardener. It has been an attempt to articulate a deeper purpose of gardens and gardening, by exploring an ethic of gardening. I offer this thesis as a contribution to our understandings of the values of the gardens in themselves and in relationship to the lives of people.

Engagement with the literature and the views and ideas of other gardeners, enlarged my perceptions of the garden. I discovered that there is a diversity of experiences and knowledges of gardening; that there is no one idea of why gardeners garden, what they perceive a garden to be, why they engage in particular practices. I heard gardeners express a range of motivations and, a wide range of ideas of what they believed to be the right thing to do in the garden. I heard many gardeners expressing

how gardening involved learning from nature. Through observation and experimentation they acquired a sense of patience and waiting, knowing that in time the garden would teach them the ‘correct’ way. This listening and observation also connected with the greater garden of Earth. Although there is more than one way of experiencing the Earth, I discovered that many gardeners believed that it is mainly through immersing oneself in gardening that one makes this connection.

In describing gardening many gardeners touched upon my understanding of stewardship. Throughout the process of interviewing and observing their gardening practices I witnessed an ethical comportment. In many of the interviews there was a cross cutting commonality, which I identified as an ethical impulse. Similarly in the diversity of their gardening practices I observed ethical behaviours. These ethical stances though different in scale, content and context were widespread amongst gardeners. In chapters four and five I sought to articulate and identify the common ground of stewardship as expressed and practised by gardeners. In chapter six I identified stewardship as an emergent, embodied and lived reality in the practices and minds of a select group of people.

This research has opened up new possibilities. I have witnessed and experienced knowledge that has added to my lifetime and history of gardening. I want to share this knowledge with the generous people with whom I have worked, and others who may be interested. I believe this knowledge and awareness could be an important contribution to re-establishing an ethical relationship with the Earth. I have discovered through these encounters with other gardeners that in gardening there is hope; hope and an opportunity to deepen collective knowledge of environmental problems and seek solutions by implementing stewardship as experienced and practised in the garden. Though not all gardeners are stewards, stewardship as an

ethic of gardening is a unifying concept can be the centre of gardeners' ethical lives. Gardeners can be a valuable source for a greater ethic, pointing to a greater vision of a relational ontology with the Earth. This ethic is not new: it is time honoured and has been practised throughout various cultures for millennia. It could re-energise people's relationship with the Earth.

In the end this thesis has been written by a gardener, a gardener for whom stewardship is a lived, conscious, conscientious and practical relationship with the cultural and natural elements that constitute the garden. In this research I have witnessed gardeners experiencing the garden as the connector between a meaningful past, and an energised future; a future of unimaginable possibilities. In this regard stewardship becomes spiritual and the garden emerges, not as an object serving human purposes, but as a dance partner, a moral subject, in a celebration of the coupling of humans and the Earth. It is a dance of blessing, fecundity, giftedness, humility and reciprocity. It is a way of being, of relating to and living in the Earth: it is an act of love.

RESEARCH AGENDA

Reflecting on the past four years of this study, the processes, literature, exploration of stewardship, my life-immersion in gardens and the garden of the Earth, and outcomes from the interaction with research partners, more questions have arisen than answers. These questions may prompt other researchers to take up and explore some of the ideas and experiences I have presented in this study.

A series of initial general questions focuses on stewardship as an ethic to inform attitudes and behaviours in contemporary gardening. For instance to what extent, if

any, do suburban gardeners in other parts of the world subscribe to ways of being in the garden that evoke and implement stewardship principles? Can stewardship, as a time honoured and relational practice that reveres the Earth, become a conscious and tangible way of being in the garden? For contemporary gardeners what role can a stewardship ethic play in their craft of gardening?

A second set of questions relate to a perceived limited geographical context of this research conducted in a small antipodean city such as Hobart. What similar correlations between gardening and stewardship might have been observed in larger Australian cities? How would considerations of research design affect an exploration of gardening and stewardship in these cities? How would environmental variables, demographics of research subjects, cultural and historical perspectives and socio economic variables, impact upon such a study in these cities. Would the findings be different given these variables?

A third group of questions arising out of research partners' and my own concerns, consternation and angst is about the manner in which commodification in gardens appears to contribute to a perceived desensitisation of the relationship of humans to the Earth. How does commodification of gardens, in part understood as people maintaining a particular lifestyle, contribute to the ecological crisis as well as decreasing ecological consciousness? Conversely how can stewardship as practised in the garden be a vehicle for challenging the current commodification of garden and the Earth? Linked to commodification, is a personal concern and one that also arose out of discussions with four research partners – that of the *intrinsic rights of plants*. In particular, the development of GM plants and the promulgation of large numbers of cultivars and hybrids, with the associated protection of PVRs and PBRs, raise the question of significant ethical complexity. This question relates to an instrumental

attitude (Plumwood, 1993) to the more than human world, benefiting humans, and human survival. How can the recognition of a gardening stewardship ethic contribute to the way we perceive the rights of plants? What are the ethical implications of conferring such rights to plants?

Fourth, how can the *genius loci* and particularity of the garden imbued with a sense of stewardship, be an explicit and conscious point of departure for further exploration of the ecological impulse? The question of the role of the gardener to inform a greater environmental ethic has been posed by Pollan (2002). However my question specifically targets incorporating stewardship gardening practices as a means of challenging the manner in which humans relate to the greater garden of the Earth. How can a stewardship ethic contribute to a greater consciousness of ecological values? Can the *genius loci* of the garden challenge people to 'tread lightly', to decrease their ecological footprint, to change their lifestyles to conserve resources and in doing so, care for all living things, and systems? Can a stewardship gardening ethic be the basis for a new environmental ethic?

Having presented my understanding of stewardship in the local suburban garden, I pose a final question of intent, of scale and of context: how do current understandings and practices of sustainability compare and contrast with stewardship?

These questions point to areas of research that have significant potential in redefining the place of humans within the garden of the Earth. The role of small suburban gardens in people's lives, the conscious internalisation and lived expression of stewardship, may bring people closer to an understanding of our true place and role on this Earth. It is this consciousness in understanding, of the employment of mindful

practices of stewardship within the local suburban garden, of re-invigorating and redefining the relationship between humans and the more than human world within an ethical framework that has been the motivation for this project.

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APPENDICES

APPENDIX 1.1

INFORMATION SHEET ONE FOR GARDEN AUDITS

UNIVERSITY OF TASMANIA

School of Geography and Environmental Studies

An Invitation to Record the Plant Species Composition of Your Garden by University Researchers

If after reading the material below you wish to be continue being involved in the project contact Tad (phone 62252404 {home}, 62262484 {university}, fax 62262989; email: tcz@utas.edu.au) or Jamie (see contact details below), or Elaine (contact details below), or Aidan (contact details below) by whatever means suits you and we will respond accordingly.

Title of Investigation: Gardens and Stewardship

CHIEF INVESTIGATOR: Professor Jamie Kirkpatrick.

CO-INVESTIGATOR: Dr. Elaine Stratford.

CO-INVESTIGATOR: Dr. Aidan Davison.

INVESTIGATOR: Thaddeus Zagorski.

This research project survey will partly fulfil the requirements of a Doctorate, being undertaken by the investigator, Tad Zagorski at the University of Tasmania, within the School of Geography and Environmental Studies.

BACKGROUND AND PURPOSE

Gardens have long played a role in the history of humanity. The role of plants in these gardens has been multiple. Apart from their utilitarian role of proving food, medicine, clothing, building materials, shelter and shade, plants have also provided numerous other benefits. Their aesthetic qualities of beauty, colour, fragrance and even therapeutic healing have long been cherished and seen as a connection to the natural world. Similarly, but especially in more recent times, plants from all over the world with a range of exotic and unique characteristics, have fascinated not only botanists but many lay people. This fascination brought about many plant collections and herbariums over the world. Plants still play a major role in people's lives: they are loved, sought after, respected for the benefits they provide, and bring joy to people's lives.

Many gardens today contain an extensive range of plants from all over the globe. Gardens reflect gardeners' preferences and choices in plants. Gardens are created around particular plants depicting a range of different garden styles. These styles may be described as cottage gardens, or Mediterranean gardens or woodland gardens. Most gardens are an eclectic mix of plants from all over the globe; some gardeners prefer only exotics, whilst others prefer a garden with native plants only.

There is a twofold purpose in conducting this audit. First, an examination of the species richness of the garden to ascertain the species composition of the garden will then be used to analyse the type of gardens arising out of the species composition. Second, observation and noting of some of the structural features and characteristics of your garden, as well as some of your gardening practices, will create a picture of your garden that with the species composition will provide crucial material evidence for engaging in the next part of the project, should you be interested.

PROCEDURE

Tad would like to walk around the garden with you listing the plants in your garden. He will ask you some brief questions about your garden, your interest in it, your time commitment to it, the amount of effort you put into it and some of your gardening practices. He will also ask you about your plant preferences and the styles of gardens that you like. He will take notes of your responses, which would be anonymous and confidential.

Please note that participation in this audit is purely voluntary and you may wish to withdraw at any time.

Should you be interested in obtaining a list of the species in your garden, these will be provided to you at the completion of the study. To obtain the results of the whole or part of the study please contact Tad as per the contact details provided previously.

If you have enjoyed and benefited from this process you may wish to participate in the next part of the study, 'extensive garden interviews.

Information sheet two is available for you should you wish to consider participating in the next part of the study.

Contact details for Chief Investigator and Co-Investigators:

Professor Jamie Kirkpatrick

Phone: 03 6226 2460

Fax: 03 6226 2989

Email: j.kirkpatrick@utas.edu.au

Dr. Elaine Stratford

Phone: 03 6226 2462

Fax: 03 6226 2989

Email: Elaine.Stratford@utas.edu.au

Dr. Aidan Davison

Phone: 03 6226 7590

Fax: 03 6226 2989

Email: aidan.davison@utas.edu.au

School of Geography and Environmental Studies

University of Tasmania,

Hobart, 7001.

This study has been approved the **Southern Tasmania Social Sciences Human Research Ethics Committee** of the University of Tasmania. Should you have any concerns of an ethical nature or complaints about the manner in which the project is conducted please contact:

Southern Tasmania Social Sciences Human Research Ethics Committee

Chair: Associate Professor Gino DalPont

Phone: 6226 2087

Mrs Amanda McAully

Executive Officer, HREC (Tasmania) Network,

Research and Development Office,

University of Tasmania,

Box 252-01. Hobart Tas 7001

Phone: 6226 2763; fax 6226 7148.

Email: Amanda.mcaully@utas.edu.au

APPENDIX 1.2

INFORMATION SHEET TWO FOR INTERVIEWS

UNIVERSITY OF TASMANIA

School of Geography and Environmental Studies

An Invitation to Discuss Your Garden with University Researchers

If after reading the material below you wish to be continue being involved in the project contact Tad (phone 62252404 {home}, 62262484 {university}, fax 62262989; email: tcz@utas.edu.au) or Jamie (see contact details below), or Elaine (contact details below), or Aidan (contact details below) by whatever means suits you and we will respond accordingly.

Title of Investigation: Gardens and Stewardship

CHIEF INVESTIGATOR: Professor Jamie Kirkpatrick.

CO-INVESTIGATOR: Dr. Elaine Stratford.

CO-INVESTIGATOR: Dr. Aidan Davison.

INVESTIGATOR: Thaddeus Zagorski.

This research project survey will partly fulfil the requirements of a Doctorate, being undertaken by the investigator, Tad Zagorski at the University of Tasmania, within the School of Geography and Environmental Studies.

BENEFIT OF RESEARCH

Today, gardens and gardening are a major social and cultural aspect of people's lives, and feature significantly in the urban landscape. Gardens are a space where interactions occur between humans and nature. These interactions I see as having an ethical basis. Gardening practices may impact upon the ethical relationship of the gardener to the garden. Yet gardening, gardening practices and ethical behaviours as a way of being in the garden have been neglected areas of academic research. Your participation in this project will contribute to a greater understanding of the interactions between ethical viewpoints, gardens and gardening practices, and the garden seen as a microcosm of the greater garden of the Earth.

PURPOSE AND BACKGROUND

Gardens are one of the oldest of human activities. Gardens and gardening have been part of the human landscape from before the existence of the famed gardens of the Sumerian civilization in the third millennium BC. The historical evolution of gardens is well documented, ranging in description from gardens as a source of food production to gardens as a place of rest and repose from the heat of the day or the burden of daily living. Gardens have been imbued with meanings; meanings influenced by culture and influencing culture. Gardens are a point of connection between people and nature; as such they may be seen as portals for examining the changing relationship between humans and nature.

There are many traditions of being involved in the natural world through gardening that reflect ethical behaviours. Some of the most ancient traditions included a deep sense of caring for and looking after the garden as a way of relating to that natural world. These traditions underscored a respectful and responsible way of engaging in the garden through the various attitudes and practices of gardeners. These attitudes and practices pointed to an ethical relationship between gardeners and their gardens. As the garden is a microcosm of the Earth, ethical behaviours in the garden also reflect a way of being and relating to the Earth. However over time people's relationship with the earth and the environment has changed. Whilst humans have always modified the environment in which they lived, within the last 200 or so years, the scale of the alteration of nature has been profound. So much so that there is much spoken about the current 'ecological crisis'. Concern is mounting about the degree to which nature is controlled and used as an object of human exploitation. The typical suburban garden may be seen as contributing to this crisis.

Gardening practices may impact upon nature either positively or negatively. The relationship of gardener to garden may be one of caring or one of disregard. Ethically motivated gardening carries with it social responsibility, communal good and a commitment to the maintenance of a trusting, reciprocal relationship with nature. In

recent times the growth of environmental thinking and concern by scholars and lay people has focused on re-addressing the relationship of humans to the natural world. An ethical perspective on gardening may be seen as a way of renewing the relationship of people to gardens and the garden of the earth.

Tad would like to talk to you about the project, taking notes of your responses, which would be anonymous and confidential. The points for discussion are based around the following themes:

1. Your understanding of nature or the Earth, and your relationship with it through the garden.
2. Examining the role of humans and their relationship with nature throughout time, and if and how this relationship has changed.
3. Your understanding of gardens and your attachment to your garden.
4. What factors have influenced the formation of your gardening attitudes and practices and, your love of gardening?
5. An exploration of your gardening practices.
6. What impact has economics and the commodification on gardens and nature.
7. What is your understanding of an ethical relationship with your garden?
8. What relationship is there between ethics and gardening practices?

Please note that participation in this project is purely voluntary and you may wish to withdraw at any time.

Should you be interested in the results of the survey, these will be provided to you at the completion of the study. To obtain the results of the whole or part of the study please contact Tad as per the contact details provided previously.

If you have enjoyed and benefited from this process you may wish to participate in the next part of the study, ‘participatory action research’.

Information sheet three is available for you should you wish to consider participating in the next part of the study.

Contact details for Chief Investigator and Co-Investigators:

Professor Jamie Kirkpatrick

Phone: 03 6226 2460

Fax: 03 6226 2989

Email: j.kirkpatrick@utas.edu.au

Dr. Elaine Stratford

Phone: 03 6226 2462

Fax: 03 6226 2989

Email: Elaine.Stratford@utas.edu.au

Dr. Aidan Davison

Phone: 03 6226 7590

Fax: 03 6226 2989

Email: aidan.davison@utas.edu.au

School of Geography and Environmental Studies

University of Tasmania,

Hobart, 7001

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Mrs Amanda McAully

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Research and Development Office,

University of Tasmania,

Box 252-01. Hobart Tas 7001

Phone: 6226 2763; fax 6226 7148.

Email: Amanda.mcaully@utas.edu.au

APPENDIX 1.3

INFORMATION SHEET THREE FOR PARTICIPATORY ACTION RESEARCH

UNIVERSITY OF TASMANIA

School of Geography and Environmental Studies

A Further Invitation to Participate in Some Practical Research with University Researchers

Title of Extended Research: Stewardship Gardening – Participatory Action Research

You have indicated from the last interview that you would like to participate in the Participatory Action Research. As part of the process I shall endeavour to inform you of the salient points.

BENEFITS OF PARTICIPATION

Your participation in this part of the research will greatly assist in obtaining a picture of the sense of stewardship practiced within gardens. Your reflections, ideas and experiences within your gardens will provide insights into how stewardship may become a conscious, lived reality in gardens. You will also be able to provide valuable feedback on your perception and the effectiveness of trying to implement these stewardship practices into your garden as part of a way of being and relating to the greater garden of the Earth. Your attitudes and practical expressions of stewardship will also highlight the important role that gardens have in maintaining a

viable relationship with nature. You may also provide ideas about extending stewardship as a response to the ecological crisis.

Specific Benefits:

1. A contribution to the greater understanding of the range of attitudes, perceptions, ideas, and practices that contribute to gardens and gardening.
2. An opportunity to review people's relationship with nature, and reflect on how humankind is part of a greater living community, beyond the human community.
3. You may provide an expanded view of the ancient tradition of stewardship and the ethical implications of the tradition in maintaining a conscious and living relationship with nature.
4. Your insights and experience of gardening may contribute to the realisation that stewardship is in many cases already being practised by gardeners.
5. Your participation may contribute greatly to furthering research in the area of gardens and gardening, stewardship ethics and a renewed perspective on the relationship of humans with nature.

CONTEXT

Stewardship is and ancient and well tried tradition and practice of caring for the 'garden of the earth' (McDonagh, 1986, 80). It has been practised in various forms, spanning millennia, by a range of peoples and cultures. Its Western traditions emerged from the biblical injunction of caring for and cultivating the garden: the greater garden of creation, for all of nature. The garden was given as gift for people to use, it was blessed and a moral responsibility was bestowed upon humans for its upkeep, and for it to be treated with respect. The underlying premise of stewardship is a caring, respectful and mindful attitude to the earth, underscored by the conscious application of practices that highlight a loving relationship with the earth, its creatures and all living systems. Historically stewardship has been associated with the craft of gardening: of being involved in growing of food, of tending plants and being mindful of peoples interaction with creation – nature.

The local suburban garden may be seen as a space where potentially stewardship practices not only exist, but are already being implemented. The craft of gardening as a conscious activity of gardeners may reflect attitudes and practices of a stewardship nature, highlighting a loving and responsible relationship of gardeners to their gardens. The implementation of stewardship attitudes and practices within the space of the local garden may also be seen as extending to the whole Earth, for the garden is a microcosm of the Earth. Given the manner in which abuse and exploitation of Earth is occurring, perhaps stewardship may hold the key for an improved, mindful, conscientious and ethical relationship with the whole of nature.

PROCEDURE

As discussed in the first part of the interview process (Information Sheet Two), ethical behaviours may be seen as the key to developing a new understanding of the role and place of gardens in the interaction of people and nature.

Over a period of 12-15 months Tad will be exploring with you all aspects of your craft of gardening and your understanding of and implementation of stewardship. This exploration will have both practical and theoretical perspectives. During this time you will have the opportunity to reflect on the process, with constant feedback to Tad. Hopefully you will be able to contribute to the debate and development of a 'garden ethic'. The time factor is important given how busy life is, but hopefully the amount of time required to be put into this project by you may amount to no more than say one half an hour each week, if indeed that.

PROCESS OF IMPLEMENTATION

The process of the participatory action research may involve some practical considerations, but the majority will involve lengthy discussions about the garden as hologram of the Earth, gardening, and stewardship as the relational bond between humans and nature.

1. Your garden:
    a) Examination of reasons and motives underpinning your practices. What values and attitudes contribute to your practices.
    b) What are your gardening practices – how would you like to improve on some of these?
    c) What difficulties and frustrations do you experience in gardening and implementing your practices?
    d) What practices do you consider to be deleterious to the health of the garden and are reflective of broader practices that affect the health of the planet?
    e) What specific benefits do you obtain from being immersed in gardening?
    f) What is your particular attachment to your garden? Your attachment to the greater garden of the Earth?

2. The Earth/nature:
    a) What are your thoughts on the garden as a microcosm of the Earth?
    b) What does the Earth mean to you?
    c) What is the specific relationship of people to the Earth and nature. How is this being compromised?
    d) Are we living in and treating the Earth in an ethical way?

3. Stewardship:
    a) What do you understand by stewardship?
    b) Are you aware of where, when and how it has been practised?
    c) How would you describe gardening practices that point to a sense of stewardship?

d) What connection is there between stewardship, gardens and gardening?
e) Can the practice of stewardship be an ethical imperative for the way we relate to the Earth?
f) Do you think your gardening practices manifest aspects of stewardship?
g) How can the practice of stewardship be the ground for a loving relationship with nature?
h) Is there potential to develop a conscious, lived gardening stewardship ethic? Can that sense of stewardship in the garden be extended to the greater garden of the Earth?

4. Your local community and property rights.

a) What is your involvement with the local community?
b) What sort of 'sense of place' does your local neighbourhood evoke?
c) How are gardens a point of connection between neighbours?
d) What is your understanding of property rights? How do these affect the way people garden? When and how do property rights conflict with the public or common good?
e) What role could stewardship gardening play in challenging people about deleterious practices, and rights that support these practices?
f) How is it possible for discussion to evolve on gardening practices, private rights, and ethical (social) responsibility, given that people tend to be very protective of their individual rights?

As part of the process it may be worth your while to have a diary which you can use to briefly note your observations, reflections, thoughts, and ideas on both the practical side of the project and also in answering the above questions.

Should you be interested in the results of the survey, these will be provided to you at the completion of the study. To obtain the results of the whole or part of the study please contact Tad as per the contact details provided previously.

Please note that participation in this part of the project is purely voluntary and should you find the project overwhelming or overly time consuming, you may wish to withdraw at any time.

Contact details for Tad:

Phone: 03 6226 2484 (university); 03 6225 2404 (home).
Fax: 03 6226 2989
Email: tcz@utas.edu.au

Contact details for Chief Investigator and Co-Investigators:

Professor Jamie Kirkpatrick
Phone: 03 6226 2460
Fax: 03 6226 2989
Email: j.kirkpatrick@utas.edu.au

Dr. Elaine Stratford
Phone: 03 6226 2462
Fax: 03 6226 2989
Email: Elaine.Stratford@utas.edu.au

Dr. Aidan Davison
Phone: 6226 7590
Fax: 03 6226 2989
Email: aidan.davison@utas.edu.au

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Southern Tasmania Social Sciences Human Research Ethics Committee

CHAIR: Associate Professor Gino DalPont

Phone: 62262078

Mrs Amanda McAully
Executive Officer, HREC (Tasmania) Network,
Research and Development Office,
University of Tasmania,
Box 252-01. Hobart Tas 7001
Phone: 6226 2763; fax 6226 7148.
Email: Amanda.mcaully@utas.edu.au

APPENDIX 2

Percentage Frequency of all taxa

Percentage frequency of taxa (those that appeared at least three times within the total sample of 2340 species) observed in gardens by garden type.1 = Coastal; 2 = Complex Flower; 3 = Production Flower complex; 4 = Native; 5 = Species poor Exotic; 6= Woodland; 7 = Vegetable.

Species	Garden Types 1	2	3	4	5	6	7
Acacia longifolia ssp. *sophorae*	**86.67**	6.25	7.69	16.67	5.26	15.38	-
Poa labillardierei	**73.33**	12.50	23.08	33.33	5.26	15.38	-
Rhagodia candolleana	**60.00**	-	7.69	-	-	-	-
Gazania x hybrida	**60.00**	37.50	46.15	33.33	31.58	15.38	25.00
Aptenia cordifolia	**53.33**	-	10.26	4.17	-	-	12.50
Tetragonia implexicoma	**53.33**	-	-	-	-	-	-
Correa alba	**53.33**	37.50	17.95	41.67	-	30.77	-
Dodonea viscosa ssp. *spatulata*	**53.33**	12.50	25.64	37.50	5.26	30.77	37.50
Agonis flexuosa	**46.67**	18.75	20.51	20.83	15.79	30.77	12.50
Osteospermum fruticosum	**40.00**	18.75	35.90	20.83	36.84	23.08	-
Callistemon sp.	**40.00**	12.50	25.64	33.33	5.26	-	12.50
Westringia fruticosa	**40.00**	37.50	23.08	29.17	5.26	23.08	12.50
Eucalyptus morrisbyi	**40.00**	-	-	4.17	10.53	-	12.50
Carpobrotus rossii	**40.00**	-	15.38	12.50	10.53	15.38	25.00
Einadia nutans	**33.33**	-	-	-	-	-	-
Senecio pinnatifolius	**33.33**	-	-	-	-	-	-
Acacia iteaphylla	**33.33**	12.50	17.95	29.17	-	-	-
Atriplex cinerea	**33.33**	-	5.13	4.17	-	-	-
Poa rodwayi	**33.33**	-	10.26	12.50	-	-	-
Acacia retinodes	**33.33**	6.25	12.82	12.50	5.26	-	12.50
Doodia sp.	**26.67**	-	-	4.17	-	-	-
Plumbago auriculata	**26.67**	18.75	25.64	-	5.26	-	-
Aloe vera	**26.67**	18.75	25.64	4.17	5.26	-	-
Delairea odorata	**26.67**	6.25	-	12.50	5.26	-	-
Erigeron speciosus	**26.67**	25.00	10.26	4.17	-	15.38	-
Yucca sp.	**26.67**	-	12.82	16.67	5.26	-	-

Arctotis hybridum	**26.67**	18.75	20.51	8.33	21.05	23.08	-
Bambusa sp.	**26.67**	-	-	4.17	-	7.69	-
Eucalyptus leucoxylon	**26.67**	12.50	17.95	8.33	10.53	-	25.00
Eucalyptus viminalis	**26.67**	-	17.95	25.00	15.79	7.69	25.00
Arundo donax	**20.00**	-	2.56	-	-	7.69	-
Lepidosperma gladiatum	**20.00**	-	-	-	-	-	-
Westringia rigida	**20.00**	-	-	-	-	-	-
Cheiranthus sp.	**20.00**	12.50	-	-	-	-	-
Aeonium undulatum	**20.00**	6.25	2.56	-	-	-	-
Drosanthemum floribundum	**20.00**	6.25	5.13	-	-	-	-
Schinus terebinthifolius	**20.00**	-	5.13	-	-	-	-
Isolepis nodosa	**20.00**	-	5.13	16.67	-	-	-
Leonotis leonurus	**20.00**	12.50	-	-	5.26	-	-
Pelargonium sp.	**20.00**	18.75	-	-	5.26	-	-
Arctotis hirsuta	**20.00**	-	2.56	-	5.26	-	-
Leucopogon parviflorus	**20.00**	-	-	-	5.26	-	-
Impatiens New Guinea Hybrids	**20.00**	12.50	15.38	8.33	-	-	12.50
Poa siberiana	**20.00**	-	5.13	12.50	-	7.69	-
Asparagus officinalis	**20.00**	-	10.26	4.17	-	-	12.50
Zantedeschia aethiopica	**20.00**	12.50	10.26	-	5.26	-	12.50
Olea europaea	**20.00**	-	17.95	4.17	5.26	7.69	-
Azalea indica	6.67	**93.75**	**61.54**	37.50	**57.89**	**84.62**	25.00
Hydrangea macrophylla	6.67	**87.50**	48.72	20.83	42.11	**61.54**	25.00
Aquilegia vulgaris cvs.	6.67	**87.50**	**79.49**	8.33	31.58	**69.23**	25.00
Agapanthus praecox subsp. *orientalis*	**66.67**	**81.25**	**71.79**	**58.33**	**57.89**	**69.23**	25.00
Lobelia erinus	20.00	**81.25**	**51.28**	8.33	47.37	30.77	-
Tanacetum parthenium	13.33	**81.25**	46.15	8.33	31.58	-	12.50
Viola x wittrockiana	33.33	**75.00**	46.15	-	21.05	-	37.50
Camellia sasanqua	-	**75.00**	35.90	8.33	15.79	**61.54**	25.00
Abelia grandiflora	-	**68.75**	23.08	45.83	42.11	38.46	-
Anemone hupehensis	-	**68.75**	12.82	-	10.53	23.08	-
Cymbidium sp.	6.67	**68.75**	28.21	4.17	5.26	-	-
Azalea kurume	-	**68.75**	43.59	12.50	31.58	53.85	-
Cyclamen persicum	-	**68.75**	41.03	-	5.26	46.15	-
Viola odorata	13.33	**68.75**	**61.54**	25.00	42.11	**61.54**	25.00
Alstroemeria peruviana cvs.	13.33	**62.50**	33.33	12.50	36.84	15.38	-
Penstemon sp.	-	**62.50**	12.82	12.50	15.79	-	-
Nerine bowdenii	-	**62.50**	33.33	4.17	26.32	30.77	-
Pittosporum tenuifolium cvs.	20.00	**62.50**	35.90	25.00	36.84	23.08	25.00
Freesia x hybrida	-	**62.50**	25.64	-	15.79	23.08	12.50
Scabiosa caucasica	6.67	**56.25**	7.69	-	10.53	15.38	-
Dahlia cvs.	6.67	**56.25**	33.33	4.17	36.84	-	25.00
Aquilegia caerulea	-	**56.25**	25.64	-	-	7.69	-
Ageratum houstonianum	-	**56.25**	5.13	-	15.79	23.08	-

Leucanthemum x superbum	-	**56.25**	25.64	20.83	31.58	38.46	-
Lilium regale	-	**56.25**	28.21	4.17	10.53	38.46	25.00
Muscari armeniacum	-	**56.25**	48.72	16.67	15.79	38.46	12.50
Penstemon barbartus	-	**56.25**	7.69	8.33	5.26	23.08	12.50
Campanula poscharskyana	-	**56.25**	33.33	-	21.05	**53.85**	12.50
Verbena x hybrida	13.33	**50.00**	17.95	-	-	-	-
Diasca barberae	6.67	**50.00**	7.69	-	-	7.69	-
Sparaxis tricolor	-	**50.00**	15.38	4.17	-	-	-
Asplenium bulbiferum	6.67	**50.00**	43.59	25.00	5.26	53.85	-
Helleborus foetidus	-	**50.00**	10.26	-	-	15.38	-
Cerastium tomentosum	6.67	**50.00**	33.33	25.00	26.32	38.46	25.00
Acanthus mollis	20.00	**50.00**	35.90	-	10.53	46.15	12.50
Clematis sp.	13.33	**50.00**	23.08	4.17	15.79	46.15	12.50
Dianthus caryophyllus	13.33	**50.00**	20.51	-	21.05	15.38	12.50
Eucomis comosa	-	**50.00**	-	-	-	7.69	-
Heuchera micrantha var. *diversifolia*	-	**50.00**	5.13	-	5.26	7.69	-
Paeonia lactiflora cvs.	-	**50.00**	23.08	8.33	15.79	15.38	-
Pelargonium peltatum	13.33	**50.00**	17.95	12.50	15.79	7.69	12.50
Pericallis x hybrida	-	**50.00**	17.95	-	10.53	15.38	25.00
Gaura lindheimeri	6.67	**43.75**	12.82	4.17	5.26	7.69	-
Correa reflexa	40.00	**43.75**	35.90	41.67	21.05	38.46	-
Thymus x citriodorus	6.67	**43.75**	33.33	12.50	-	-	25.00
Cosmos bipinnatus	13.33	**43.75**	7.69	-	10.53	-	-
Stachys byzantina	6.67	**43.75**	25.64	-	-	-	25.00
Geranium sp.	13.33	**43.75**	30.77	-	15.79	38.46	-
Origanum vulgare	13.33	**43.75**	41.03	20.83	-	-	12.50
Artemisia arborescens	13.33	**43.75**	12.82	8.33	10.53	30.77	-
Antirrhinum majus	20.00	**43.75**	7.69	4.17	15.79	-	12.50
Clivia miniata	-	**43.75**	23.08	-	15.79	30.77	-
Dianthus cvs.	20.00	**43.75**	15.38	4.17	10.53	-	12.50
Freesia lactea	6.67	**43.75**	35.90	8.33	36.84	38.46	12.50
Lychnis coronaria	-	**43.75**	12.82	4.17	5.26	7.69	-
Nandina domestica	-	**43.75**	25.64	-	10.53	15.38	-
Nepeta cataria	6.67	**43.75**	35.90	12.50	5.26	7.69	25.00
Penstemon x gloxiniodes	-	**43.75**	-	-	-	23.08	-
Pilea cadierei	-	**43.75**	33.33	12.50	10.53	38.46	-
Iris xiphium cvs.	-	**43.75**	30.77	8.33	5.26	15.38	12.50
Phlox drummondii	-	**43.75**	-	-	-	-	12.50
Viburnum opulus	-	**43.75**	17.95	4.17	15.79	7.69	12.50
Viola hederacea	-	**43.75**	28.21	12.50	5.26	7.69	12.50
Salvia uliginosa	-	**37.50**	17.95	-	-	-	-
Acmena smithii	20.00	**37.50**	2.56	4.17	5.26	-	-
Helichrysum italicum	13.33	**37.50**	20.51	25.00	5.26	-	-
Salvia leucantha	-	**37.50**	12.82	4.17	-	-	-

Armeria maritima	6.67	**37.50**	20.51	8.33	26.32	23.08	-
Chlorophytum comosum 'Variegatum'	13.33	**37.50**	33.33	12.50	26.32	15.38	-
Convolvulus cneorum	-	**37.50**	10.26	4.17	5.26	-	-
Hebe sp.	26.67	**37.50**	12.82	8.33	36.84	23.08	-
Hedychium gardnerianum	-	**37.50**	20.51	8.33	10.53	-	-
Lilium lancifolium	6.67	**37.50**	35.90	4.17	21.05	15.38	-
Prunus serrulata 'Sato-zakura'	6.67	**37.50**	23.08	16.67	10.53	30.77	-
Senecio cineraria	20.00	**37.50**	17.95	8.33	15.79	15.38	-
Polygonatum odoratum	-	**37.50**	7.69	-	-	7.69	-
Iris pallida	-	**37.50**	10.26	4.17	-	15.38	-
Chamaecyparis lawsoniana cvs.	13.33	**37.50**	12.82	8.33	31.58	15.38	25.00
Buxus sempervirens	13.33	**37.50**	7.69	4.17	10.53	15.38	12.50
Dahlia imperialis	-	**37.50**	7.69	4.17	5.26	7.69	-
Felicia amelloides	20.00	**37.50**	30.77	8.33	10.53	23.08	25.00
Galanthus nivalis	-	**37.50**	7.69	4.17	5.26	30.77	-
Penstemon heterophyllus	-	**37.50**	15.38	-	5.26	15.38	-
Viburnum x burkwoodii	-	**37.50**	25.64	8.33	15.79	30.77	-
Petunia x hybrida	-	**37.50**	20.51	-	15.79	-	12.50
Colchicum autumnale	-	**37.50**	15.38	-	-	30.77	12.50
Magnolia x soulangeana	-	**37.50**	25.64	4.17	15.79	23.08	12.50
Iris foetidissima	6.67	**31.25**	10.26	-	-	-	-
Ixia maculata	-	**31.25**	-	-	-	-	-
Bracteantha bracteata	6.67	**31.25**	10.26	8.33	-	-	-
Limonium sinuatum	-	**31.25**	7.69	-	-	-	-
Podranea ricasoliana	-	**31.25**	7.69	-	-	-	-
Rehmannia elata	-	**31.25**	5.13	-	-	-	-
Anigozanthos flavidus	-	**31.25**	7.69	12.50	-	-	-
Linaria vulgaris	-	**31.25**	7.69	4.17	-	-	-
Dichondra repens	13.33	**31.25**	12.82	4.17	-	15.38	-
Campanula persicifolia	-	**31.25**	12.82	-	5.26	-	-
Catharanthus roseus	-	**31.25**	5.13	-	5.26	-	-
Achillea millefolium	13.33	**31.25**	30.77	-	5.26	30.77	-
Lavendula allardii	-	**31.25**	10.26	4.17	5.26	-	-
Hyacinthoides hispanica	-	**31.25**	10.26	-	-	23.08	-
Prostanthera cuneata	-	**31.25**	5.13	-	-	15.38	-
Narcissus bulbocodium	-	**31.25**	10.26	-	-	7.69	-
Helleborus x hybridus	-	**31.25**	15.38	-	5.26	15.38	-
Aucuba japonica	-	**31.25**	15.38	4.17	-	23.08	-
Hypericum beanii	-	**31.25**	10.26	8.33	10.53	15.38	-
Phormium tenax	-	**31.25**	10.26	16.67	21.05	30.77	-
Polygonatum hybridum	-	**31.25**	10.26	-	10.53	7.69	-
Pratia pendunculata	-	**31.25**	12.82	12.50	5.26	15.38	-
Iris siberica	-	**31.25**	10.26	4.17	10.53	-	12.50
Penstemon 'Zuriblau'	-	**31.25**	-	8.33	5.26	15.38	-

Crowea exalata	-	**31.25**	7.69	8.33	-	15.38	12.50
Cheiranthus cheiri	-	**31.25**	17.95	4.17	10.53	7.69	12.50
Tibouchina macrantha	-	**31.25**	-	4.17	5.26	7.69	12.50
Euphorbia amygdaloides 'Rubra'	-	**25.00**	5.13	-	5.26	-	-
Nerine filifolia	-	**25.00**	5.13	-	5.26	-	-
Coreopsis lanceolata	-	**25.00**	-	-	-	-	-
Ficus benjamina	-	**25.00**	-	-	-	-	-
Verbena officinalis	-	**25.00**	-	-	-	-	-
Abelia chinensis	-	**25.00**	2.56	-	-	-	-
Calluna vulgaris cvs.	-	**25.00**	5.13	-	-	-	-
Calochlaena dubia	-	**25.00**	5.13	-	-	-	-
Delphinium grandiflorum	-	**25.00**	5.13	-	-	-	-
Helichrysum petiolare	6.67	**25.00**	5.13	4.17	-	-	-
Heliotropium arborescens	-	**25.00**	5.13	-	-	-	-
Limonium perezii	6.67	**25.00**	5.13	4.17	-	-	-
Mimulus x hybridus	-	**25.00**	5.13	-	-	-	-
Narcissus rupicola	-	**25.00**	5.13	-	-	-	-
Ophiopogon japonicus	-	**25.00**	10.26	-	-	-	-
Hibbertia scandens	20.00	**25.00**	-	-	5.26	-	-
Metrosideros excelsa	13.33	**25.00**	15.38	-	10.53	-	-
Agonis flexuosa 'Nana'	13.33	**25.00**	2.56	4.17	5.26	-	-
Borago officinalis	6.67	**25.00**	20.51	4.17	10.53	-	-
Calathea zebrina	-	**25.00**	-	8.33	-	-	-
Canna x generalis	6.67	**25.00**	23.08	4.17	5.26	-	-
Platycerium superbum	-	**25.00**	-	4.17	-	-	-
Westringia fruticosa 'Variegata'	13.33	**25.00**	-	4.17	5.26	-	-
Pelargonium crispum	6.67	**25.00**	23.08	-	-	-	12.50
Amaryllis belladonna	-	**25.00**	10.26	4.17	10.53	-	-
Asparagus plumosa	-	**25.00**	12.82	4.17	5.26	-	-
Garrya elliptica	-	**25.00**	5.13	4.17	10.53	-	-
Geranium macrorrhizum	-	**25.00**	-	-	5.26	-	-
Hardenbergia violacea	6.67	**25.00**	12.82	16.67	21.05	15.38	-
Hosta fortunei cvs.	-	**25.00**	-	-	5.26	-	-
Juncus sp.	-	**25.00**	5.13	4.17	10.53	-	-
Solanum rantonnetii	6.67	**25.00**	15.38	4.17	10.53	7.69	-
Thuja occidentalis cvs.	13.33	**25.00**	-	-	15.79	7.69	-
Philodendron bipinnatifidum	6.67	**25.00**	7.69	-	5.26	-	12.50
Schlumbergera cvs.	20.00	**25.00**	20.51	-	10.53	-	12.50
Tagetes patula	6.67	**25.00**	7.69	-	10.53	-	12.50
Hippeastrum sp.	-	**25.00**	17.95	-	-	7.69	-
Nerine fothergillii	-	**25.00**	10.26	-	-	7.69	-
Polygonatum multiflorum	-	**25.00**	7.69	-	-	7.69	-
Begonia sempervirens	6.67	**25.00**	7.69	4.17	-	7.69	12.50
Primula malacoides	-	**25.00**	12.82	-	-	15.38	-

Thryptomene saxicola	6.67	**25.00**	5.13	16.67	-	7.69	12.50
Anemone x hybrida	-	**25.00**	-	-	-	7.69	-
Westringia glabra	6.67	**25.00**	10.26	20.83	-	15.38	12.50
Bergenia stracheyii	-	**25.00**	7.69	-	5.26	7.69	-
Aspidistra elatior	-	**25.00**	10.26	4.17	5.26	7.69	-
Cyathea australis	-	**25.00**	5.13	8.33	5.26	23.08	-
Echeveria secunda	-	**25.00**	23.08	-	15.79	23.08	-
Geum coccineum	-	**25.00**	10.26	-	-	-	12.50
Hosta plantaginea	-	**25.00**	-	-	-	15.38	-
Iris confusa	-	**25.00**	5.13	-	5.26	7.69	-
Lilium 'Asiatic Hybrid'	-	**25.00**	7.69	4.17	5.26	7.69	-
Origanum majorana	-	**25.00**	10.26	-	-	-	12.50
Rhodonendron Mollis Azalea	-	**25.00**	7.69	-	5.26	23.08	-
Scleranthus biflorus	-	**25.00**	-	-	-	15.38	-
Tecomaria capensis	20.00	**25.00**	15.38	16.67	21.05	7.69	12.50
Myrtus ugni	-	**25.00**	5.13	-	5.26	-	12.50
Ranunculus asiaticus	-	**25.00**	-	-	5.26	7.69	-
Chamaecyparis thyoides	-	**25.00**	5.13	-	5.26	7.69	12.50
Gladiolus communis	-	**25.00**	7.69	-	5.26	15.38	12.50
Erica melanothera	-	**25.00**	-	-	10.53	-	12.50
Rosa sp.	33.33	**93.75**	**94.87**	**62.50**	**94.74**	**92.31**	**75.00**
Camellia japonica	13.33	**81.25**	**84.62**	29.17	**63.16**	**84.62**	25.00
Rosmarinus officinalis	33.33	**68.75**	**87.18**	37.50	26.32	**61.54**	25.00
Mentha x piperata	20.00	31.25	**76.92**	25.00	21.05	**69.23**	37.50
Tropaeolum sp.	20.00	31.25	**74.36**	33.33	31.58	46.15	25.00
Petroselinum crispum	**53.33**	**50.00**	**74.36**	20.83	31.58	7.69	**50.00**
Malus domestica	6.67	**50.00**	**64.10**	41.67	36.84	23.08	37.50
Citrus limon	20.00	43.75	**64.10**	16.67	26.32	23.08	12.50
Lavendula angustifolia	40.00	**62.50**	**64.10**	29.17	36.84	**53.85**	37.50
Solanum tuberosum	13.33	12.50	**61.54**	25.00	21.05	7.69	**50.00**
Salvia officinalis	13.33	25.00	**61.54**	12.50	15.79	46.15	37.50
Fragaria x ananassa	13.33	31.25	**58.97**	4.17	15.79	7.69	**50.00**
Thymus vulgaris	20.00	**50.00**	**56.41**	16.67	15.79	15.38	25.00
Lactuca sativa	13.33	25.00	**53.85**	16.67	5.26	-	**50.00**
Rheum x cultorum	-	31.25	**53.85**	8.33	5.26	7.69	37.50
Phaseolus vulgaris	-	37.50	**51.28**	8.33	5.26	-	**50.00**
Melissa officinalis	-	25.00	**51.28**	12.50	5.26	15.38	37.50
Allium schoenoprasum	-	37.50	**48.72**	12.50	10.53	7.69	37.50
Prunus persica	6.67	25.00	**46.15**	16.67	21.05	15.38	37.50
Prunus armeniaca	-	25.00	**46.15**	29.17	26.32	-	25.00
Allium cepa	6.67	31.25	**43.59**	8.33	-	7.69	37.50
Syringa vulgaris	6.67	31.25	**43.59**	20.83	10.53	30.77	12.50
Ribes sanguineum	-	18.75	**43.59**	8.33	10.53	38.46	12.50
Ribes nigrum	-	-	**41.03**	12.50	5.26	15.38	-

Prunus cerasifera	6.67	18.75	**41.03**	33.33	31.58	38.46	25.00
Pyrus communis	20.00	12.50	**41.03**	12.50	15.79	-	25.00
Prunus persica var. *nectarina*	-	18.75	**41.03**	25.00	36.84	-	12.50
Dianthus barbatus	-	37.50	**41.03**	8.33	36.84	30.77	12.50
Cistus ladanifer	20.00	18.75	**38.46**	4.17	36.84	30.77	12.50
Brassica oleracea italica	6.67	18.75	**38.46**	8.33	5.26	-	37.50
Polystichum proliferum	13.33	25.00	**38.46**	25.00	15.79	**38.46**	12.50
Rubus idaeus	6.67	18.75	**38.46**	12.50	10.53	7.69	37.50
Vitis vinifera	6.67	25.00	**38.46**	12.50	26.32	7.69	12.50
Brassica oleracea capitata	-	6.25	**38.46**	4.17	5.26	-	12.50
Dendranthema x grandiflorum	-	31.25	**38.46**	8.33	15.79	23.08	25.00
Calendula officinalis	-	31.25	**38.46**	-	26.32	23.08	25.00
Chaenomeles speciosa	6.67	25.00	**35.90**	16.67	21.05	15.38	-
Cordyline australis cvs.	20.00	25.00	**35.90**	25.00	26.32	23.08	-
Ocimum basilicum	6.67	12.50	**35.90**	4.17	5.26	-	12.50
Lavendula stoechas	13.33	18.75	**35.90**	25.00	5.26	30.77	25.00
Chrysocephalum apiculatum	-	31.25	**35.90**	12.50	5.26	30.77	12.50
Capsicum annuum 'Grossum'	6.67	18.75	**33.33**	4.17	5.26	-	-
Passiflora edulis	6.67	-	**33.33**	8.33	15.79	-	12.50
Abutilon x hybridum	-	25.00	**33.33**	4.17	10.53	23.08	-
Sambucus nigra	-	25.00	**33.33**	-	10.53	15.38	-
Wisteria sinensis	6.67	-	**33.33**	-	21.05	23.08	12.50
Laurus nobilis	13.33	25.00	**30.77**	20.83	5.26	15.38	25.00
Mentha spicata	6.67	-	**28.21**	4.17	5.26	7.69	-
Ribes rubrum	-	-	**28.21**	12.50	5.26	23.08	-
Soleirolia soleirolii	6.67	25.00	**25.64**	-	-	-	-
Symphytum officinale	-	12.50	**25.64**	4.17	-	-	-
Allium tuberosum	6.67	12.50	**25.64**	4.17	-	-	12.50
Pelargonium tomentosum	13.33	25.00	**25.64**	-	5.26	7.69	-
Cheiranthus mutabilis	6.67	25.00	**25.64**	4.17	10.53	15.38	-
Grevillea 'Robyn Gordon'	13.33	18.75	**25.64**	12.50	5.26	23.08	-
Allium sativum	-	-	**25.64**	-	5.26	-	-
Passiflora mollissima	13.33	18.75	**25.64**	12.50	21.05	7.69	-
Escholtzia californica	6.67	25.00	**25.64**	4.17	15.79	15.38	12.50
Ficus carica	-	6.25	**25.64**	-	15.79	7.69	-
Lippia citriodora	6.67	12.50	**25.64**	8.33	5.26	7.69	12.50
Crassula multiclava	-	18.75	**25.64**	12.50	5.26	7.69	12.50
Apium graveolens var. *dulce*	-	6.25	**23.08**	-	-	-	-
Fragaria vesca	-	12.50	**23.08**	8.33	10.53	**23.08**	-
Pandorea jasminoides	-	12.50	**23.08**	12.50	10.53	7.69	-
Helianthus tuberosus	6.67	-	**23.08**	-	5.26	7.69	-
Jasminum mesnyi	-	12.50	**23.08**	12.50	5.26	7.69	-
Phaseolus coccineus	-	-	**23.08**	4.17	5.26	-	-
Helianthus annus	-	12.50	**20.51**	4.17	-	-	-

Zea mays	6.67	-	**20.51**	8.33	-	-	25.00
Lilium candidum	13.33	18.75	**20.51**	4.17	-	7.69	-
Rubus idaeus cvs.	-	18.75	**20.51**	-	5.26	-	-
Cymbopogon citratus	-	6.25	**20.51**	-	-	7.69	-
Acacia melanoxylon	6.67	12.50	33.33	**70.83**	15.79	46.15	25.00
Callistemon pallidus	6.67	25.00	30.77	**66.67**	5.26	**53.85**	-
Leptospermum scoparium	20.00	37.50	48.72	**62.50**	10.53	38.46	25.00
Allocasuarina verticillata	46.67	6.25	23.08	**54.17**	10.53	-	-
Eucalyptus pulchella	26.67	-	20.51	**50.00**	5.26	15.38	25.00
Callistemon KPS	13.33	25.00	28.21	**45.83**	10.53	15.38	12.50
Melaleuca ericifolia	40.00	-	15.38	**45.83**	10.53	23.08	-
Pteridium esculentum	13.33	-	35.90	**45.83**	26.32	30.77	25.00
Eucalyptus ovata	-	6.25	12.82	**45.83**	10.53	15.38	12.50
Acacia *howittii*	13.33	6.25	23.08	**41.67**	15.79	30.77	25.00
Hardenbergia comptoniana	20.00	18.75	15.38	**41.67**	15.79	15.38	-
Grevillea australis cvs.	-	12.50	20.51	**41.67**	10.53	38.46	12.50
G*revillea* 'Clearview David'	-	-	23.08	**41.67**	5.26	30.77	-
Melaleuca armillaris	13.33	12.50	10.26	**37.50**	10.53	7.69	-
Acacia baileyana	6.67	6.25	20.51	**37.50**	26.32	23.08	25.00
Melaleuca hypericoides	-	-	17.95	**37.50**	10.53	15.38	12.50
Chrysanthemoides monilifera	6.67	-	12.82	**33.33**	-	23.08	-
Myoporum parvifolium	20.00	31.25	17.95	**33.33**	-	7.69	-
Eucalyptus tenuiramis	13.33	-	15.38	**33.33**	-	7.69	-
Grevillea sp.	13.33	12.50	10.26	**33.33**	5.26	23.08	-
Exocarpus cupressiformis	-	-	17.95	**33.33**	5.26	30.77	-
Leptospermum grandiflorum	6.67	12.50	7.69	**29.17**	-	7.69	-
Melaleuca nesophila	20.00	12.50	5.13	**29.17**	10.53	-	-
Melaleuca diosmifolia	13.33	18.75	23.08	**29.17**	-	15.38	-
Hakea lissosperma	13.33	-	7.69	**29.17**	-	15.38	-
Leptospermum lanigerum	6.67	-	15.38	**29.17**	-	15.38	-
Callistemon citrinus cvs	6.67	18.75	25.64	**29.17**	21.05	7.69	12.50
Eucalyptus ficifolia	6.67	25.00	23.08	**29.17**	26.32	7.69	25.00
Diplarrena moraea	6.67	6.25	15.38	**29.17**	5.26	15.38	12.50
Acacia longifolia	20.00	-	20.51	**29.17**	15.79	15.38	25.00
Eucalyptus amygdalina	13.33	-	5.13	**29.17**	15.79	7.69	12.50
Lomandra longifolia	26.67	-	15.38	**29.17**	15.79	7.69	25.00
Eucalyptus risdonii	-	-	7.69	**29.17**	10.53	15.38	25.00
Grevillea victoriea	-	-	10.26	**29.17**	5.26	7.69	12.50
Protea sp.	13.33	-	20.51	**25.00**	21.05	7.69	-
Acacia verticillata	13.33	-	7.69	**25.00**	-	15.38	-
Ozothamnus purparescens	13.33	-	5.13	**25.00**	-	23.08	-
Leptospermum rupestre	-	18.75	15.38	**25.00**	-	15.38	12.50
Callistemon viminalis cvs.	-	6.25	10.26	**25.00**	21.05	23.08	12.50
Indigofera australis	-	-	15.38	**20.83**	-	7.69	-

Baeckea ramosissima	6.67	-	17.95	**20.83**	-	-	-
Hakea salicifolia	6.67	-	10.26	**20.83**	-	-	-
Leptospermum laevigatum	13.33	-	7.69	**20.83**	-	-	-
Correa backhouseana	20.00	6.25	7.69	**20.83**	-	15.38	-
Callitrix tetragona	13.33	6.25	12.82	**20.83**	5.26	15.38	-
Dianella revoluta	20.00	-	5.13	**20.83**	-	7.69	-
Kunzea baxteri	20.00	-	5.13	**20.83**	-	7.69	-
Acaena novae-zelandiae	13.33	-	7.69	**20.83**	5.26	15.38	-
Kunzea ambigua	6.67	-	12.82	**20.83**	-	-	12.50
Grevillea hookeriana cvs.	-	-	12.82	**20.83**	5.26	-	-
Pultenaea juniperina	-	-	-	**20.83**	-	-	-
Eriostemon verrucosus	-	12.50	15.38	**20.83**	-	7.69	12.50
Eucalyptus gunnii	-	-	7.69	**20.83**	10.53	15.38	-
Coleonema pulchrum	33.33	**56.25**	**53.85**	45.83	**73.68**	46.15	25.00
Lobularia maritima	46.67	**62.50**	43.59	29.17	**68.42**	23.08	12.50
Coprosma repens	33.33	25.00	41.03	16.67	**52.63**	23.08	25.00
Iris sp.	33.33	43.75	38.46	25.00	**47.37**	38.46	12.50
Pittosporum eugenoides 'Variegatum'	13.33	25.00	20.51	16.67	**47.37**	30.77	12.50
Hebe buxifolia	13.33	31.25	30.77	33.33	**42.11**	23.08	-
Photinia sp.	6.67	18.75	41.03	33.33	**42.11**	23.08	-
Juniperus communis cvs.	13.33	31.25	30.77	16.67	**42.11**	30.77	12.50
Zantedeschia aethiopica	13.33	37.50	41.03	12.50	**42.11**	23.08	12.50
Thuja orientalis cvs.	6.67	18.75	12.82	16.67	**36.84**	15.38	12.50
Osteospermum jucundum	26.67	31.25	20.51	29.17	**36.84**	23.08	-
Euryops pectinatus	20.00	12.50	30.77	29.17	**31.58**	7.69	-
Fraxinus excelsior 'aurea'	-	-	7.69	4.17	**26.32**	7.69	-
Tradescantia fluminensis	13.33	18.75	20.51	4.17	**21.05**	-	-
Cupressus sempervirens cvs	-	12.50	5.13	8.33	**21.05**	7.69	12.50
Lathyrus odoratus	-	-	12.82	4.17	**21.05**	-	12.50
Dicksonia antarctica	20.00	**50.00**	**71.79**	**62.50**	**73.68**	**100.00**	12.50
Rhododendron sp.	6.67	**81.25**	**58.97**	**50.00**	**57.89**	**92.31**	25.00
Narcissus cvs.	6.67	**68.75**	**76.92**	29.17	47.37	**84.62**	37.50
Erigeron karvinskianus	26.67	**68.75**	**74.36**	37.50	**52.63**	**84.62**	-
Betula pendula	-	**50.00**	**53.85**	25.00	31.58	**84.62**	25.00
Argyranthemum frutescens	**73.33**	**62.50**	**69.23**	33.33	**68.42**	**76.92**	12.50
Acer palmatum	-	**68.75**	30.77	20.83	15.79	**76.92**	-
Cotoneaster sp.	6.67	25.00	46.15	**58.33**	**63.16**	**76.92**	-
Fuchsia x hybrida	20.00	**56.25**	**74.36**	**50.00**	42.11	**76.92**	25.00
Lavendula dentata	46.67	43.75	**69.23**	37.50	26.32	**76.92**	12.50
Myosotis sylvatica	20.00	**68.75**	**64.10**	37.50	**63.16**	**76.92**	12.50
Acacia dealbata	6.67	-	28.21	**58.33**	10.53	**76.92**	25.00
Eucalyptus regnans	-	-	10.26	8.33	-	**76.92**	-
Helleborus orientalis	13.33	**68.75**	25.64	4.17	21.05	**69.23**	-
Dianella tasmanica	53.33	31.25	30.77	45.83	5.26	**69.23**	12.50

Digitalis purpurea	-	43.75	30.77	4.17	31.58	**69.23**	-
Hedera helix	20.00	**56.25**	**61.54**	41.67	21.05	**69.23**	12.50
Jasminum polyanthum	13.33	**68.75**	**61.54**	41.67	**63.16**	**69.23**	37.50
Lunaria annua	-	**50.00**	35.90	20.83	26.32	**69.23**	-
Olearia argophylla	-	-	7.69	20.83	-	**69.23**	-
Viburnum tinus	26.67	43.75	38.46	29.17	21.05	**69.23**	37.50
Banksia marginata	33.33	18.75	28.21	33.33	10.53	**61.54**	12.50
Bergenia x schmidtii	13.33	25.00	48.72	12.50	15.79	**61.54**	12.50
Eucalyptus delagatensis	-	-	5.13	8.33	-	**61.54**	-
Cytisus scoparius	-	6.25	5.13	16.67	5.26	**61.54**	12.50
Ajuga reptans	6.67	**50.00**	17.95	12.50	10.53	**53.85**	-
Blechnum nudum	-	**50.00**	25.64	16.67	-	**53.85**	-
Convallaria majalis	-	37.50	23.08	12.50	21.05	**53.85**	-
Kniphofia uvaria	6.67	18.75	28.21	20.83	-	**53.85**	12.50
Lonicera japonica	13.33	31.25	20.51	33.33	26.32	**53.85**	-
Buddleja davidii	13.33	31.25	28.21	12.50	21.05	**53.85**	12.50
Epacris impressa	-	6.25	15.38	20.83	10.53	**53.85**	-
Leucajum vernum	-	18.75	12.82	4.17	10.53	**53.85**	-
Rhododendron fragrantissima	-	25.00	17.95	-	5.26	**53.85**	-
Eucalyptus globulus	6.67	-	30.77	25.00	10.53	**53.85**	25.00
Gahnia grandis	-	-	5.13	33.33	-	**53.85**	-
Leycesteria formosa	-	-	20.51	8.33	10.53	**53.85**	-
Primula x polyantha	-	43.75	38.46	8.33	15.79	**53.85**	12.50
Rubus fruticosus	-	-	41.03	33.33	26.32	**53.85**	-
Weigela florida	-	43.75	30.77	4.17	26.32	**53.85**	12.50
Eucalyp*tus obliqua*	-	-	7.69	20.83	5.26	**53.85**	12.50
Spiraea cantoniensis	6.67	25.00	25.64	8.33	-	**46.15**	-
Blechnum penna-marina	6.67	18.75	7.69	12.50	-	**46.15**	-
Rosa banksiae	13.33	37.50	35.90	20.83	42.11	**46.15**	-
Olearia phlogopappa	6.67	-	-	29.17	-	**46.15**	-
Anopterus glandulosus	-	6.25	5.13	8.33	-	**46.15**	-
Sollya heterophylla	33.33	-	7.69	29.17	-	**46.15**	-
Fuchsia magellanica	-	12.50	28.21	20.83	-	**46.15**	-
Pinus radiata	6.67	-	5.13	16.67	5.26	**46.15**	-
Callitris rhomboidea	6.67	6.25	17.95	25.00	5.26	**46.15**	12.50
Daphne odora	6.67	37.50	43.59	12.50	36.84	**46.15**	25.00
Doodia media	-	12.50	23.08	16.67	21.05	**46.15**	-
Hebe speciosa	13.33	43.75	33.33	37.50	31.58	**46.15**	12.50
Hemerocallis cvs.	13.33	37.50	20.51	8.33	26.32	**46.15**	12.50
Ipheion uniflorum	-	18.75	12.82	8.33	10.53	**46.15**	-
Bedfordia linearis	-	-	5.13	4.17	-	**46.15**	-
Cytisus palmensis	6.67	-	12.82	25.00	5.26	**46.15**	12.50
Nothofagus cunninghamii	-	-	10.26	20.83	-	**46.15**	-
Prostanthera lasianthos	-	-	7.69	12.50	-	**46.15**	-

Telopea truncata	-	-	10.26	12.50	-	**46.15**	-
Gladiolus Grandiflorus Group.	-	-	28.21	8.33	15.79	**46.15**	25.00
Nothofagus fusca	-	-	-	-	-	**46.15**	25.00
Blechnum wattsii	6.67	25.00	20.51	20.83	-	**38.46**	-
Asplenium nidus	6.67	18.75	15.38	-	5.26	**38.46**	-
Convolvulus sabatius	13.33	31.25	17.95	-	10.53	**38.46**	-
Choisya ternata	6.67	25.00	17.95	8.33	10.53	**38.46**	-
Escallonia rubra	13.33	18.75	15.38	16.67	21.05	**38.46**	-
Pomaderris elliptica	6.67	-	10.26	25.00	-	**38.46**	-
Vinca minor	6.67	-	5.13	8.33	-	**38.46**	-
Acer palmatum cvs.	-	37.50	10.26	8.33	-	**38.46**	-
Athrotaxis selaginoides	-	6.25	10.26	8.33	-	**38.46**	-
Ceanothus sp.	6.67	6.25	28.21	25.00	26.32	**38.46**	37.50
Ilex aquifolium	6.67	-	10.26	12.50	5.26	**38.46**	-
Callitris oblonga	-	6.25	12.82	16.67	-	**38.46**	-
Melaleuca gibbosa	-	12.50	7.69	25.00	-	**38.46**	-
Crocosmia x crocosmiifolia	-	37.50	35.90	29.17	21.05	**38.46**	-
Dierama pulcherrimum	-	25.00	12.82	4.17	5.26	**38.46**	-
Lamium maculatum	6.67	37.50	7.69	4.17	5.26	**38.46**	12.50
Ligustrum vulgare	-	12.50	12.82	16.67	5.26	**38.46**	-
Liquidambar styraciflua	6.67	12.50	20.51	16.67	10.53	**38.46**	25.00
Pittosporum undulatum	13.33	12.50	28.21	20.83	31.58	**38.46**	12.50
Tasmannia lanceolata	-	12.50	15.38	25.00	5.26	**38.46**	-
Acer saccharum	-	-	5.13	8.33	-	**38.46**	-
Banksia ericifolia	-	-	10.26	25.00	-	**38.46**	-
Coprosma nitida	-	-	5.13	8.33	-	**38.46**	-
Crataegus monogyna	6.67	-	10.26	20.83	10.53	**38.46**	12.50
Cupressus sempervirens var. *horizontalis*	-	6.25	-	-	10.53	**38.46**	-
Genista monspessulana	13.33	-	17.95	37.50	36.84	**38.46**	12.50
Juniperus sabina cvs.	6.67	-	10.26	4.17	5.26	**38.46**	12.50
Lagarostrobus franklinii	-	-	7.69	4.17	-	**38.46**	-
Pittosporum bicolor	-	-	5.13	8.33	-	**38.46**	-
Eucryphia lucida	-	6.25	17.95	8.33	-	**38.46**	12.50
Cotoneaster horizontalis	-	25.00	23.08	20.83	10.53	**38.46**	12.50
Salix tortuosa	-	-	10.26	4.17	10.53	**38.46**	-
Hebe speciosa 'La Seduisante'	-	-	10.26	20.83	10.53	**38.46**	12.50
Melaleuca linariifolia	-	-	20.51	25.00	15.79	**38.46**	12.50
Pomaderris apetala	-	-	10.26	29.17	5.26	**38.46**	12.50
Prunus avium	-	-	30.77	16.67	10.53	**38.46**	37.50
Banksia serrata	13.33	6.25	12.82	16.67	-	**30.77**	-
Aster novi-belgii	13.33	12.50	20.51	4.17	15.79	**30.77**	-
Clematis aristata	6.67	18.75	20.51	12.50	10.53	**30.77**	-
Echium candicans	13.33	18.75	12.82	20.83	10.53	**30.77**	-
Grevillea rosmarinifolia	6.67	25.00	25.64	25.00	15.79	**30.77**	-

Pandorea pandorana	13.33	25.00	12.82	29.17	10.53	**30.77**	-
Vinca major	26.67	12.50	23.08	12.50	15.79	**30.77**	-
Cornus alba	-	6.25	7.69	-	-	**30.77**	-
Cryptomeria japonica	-	6.25	7.69	4.17	-	**30.77**	-
Allocasuarina littoralis	6.67	-	12.82	29.17	5.26	**30.77**	-
Coprosma kirkii	-	6.25	15.38	12.50	21.05	**30.77**	-
Geranium robertianum	-	25.00	10.26	-	5.26	**30.77**	-
Juniperus conferta cvs	-	18.75	12.82	8.33	5.26	**30.77**	-
Lilium longiflorum	-	25.00	23.08	-	15.79	**30.77**	-
Lithodora diffusa	-	25.00	28.21	4.17	10.53	**30.77**	-
Lonicera nitida	-	12.50	10.26	20.83	21.05	**30.77**	-
Phymatosorus pustulatus	-	18.75	12.82	4.17	5.26	**30.77**	-
Pieris japonica	-	18.75	10.26	4.17	15.79	**30.77**	-
Vinca major 'Variegata'	-	18.75	7.69	8.33	15.79	**30.77**	-
Bauera rubioides	-	-	5.13	20.83	-	**30.77**	-
Juniperus horizontalis cvs.	13.33	-	10.26	16.67	21.05	**30.77**	12.50
Lomatia tinctoria	-	-	5.13	16.67	-	**30.77**	-
Muehlenbeckia axillaris	-	-	5.13	8.33	-	**30.77**	-
Richea dracophylla	-	-	10.26	4.17	-	**30.77**	-
Adiantum aethiopicum	-	18.75	20.51	4.17	5.26	**30.77**	12.50
Atherosperma moschatum	-	-	7.69	-	-	**30.77**	-
Epacris sp.	-	-	5.13	-	-	**30.77**	-
Fraxinus angustifolia	-	-	7.69	12.50	10.53	**30.77**	-
Fraxinus excelsior	-	-	5.13	-	-	**30.77**	-
Hyacinthus orientalis	-	25.00	17.95	16.67	15.79	**30.77**	12.50
Hypericum sp.	-	-	15.38	8.33	5.26	**30.77**	-
Salvia elegans	-	18.75	23.08	8.33	10.53	**30.77**	25.00
Zingiber officinale	-	-	15.38	8.33	10.53	**30.77**	-
Acer pseudoplatanus	-	-	2.56	-	5.26	**30.77**	-
Hypericum androsaemum	-	-	5.13	-	5.26	**30.77**	-
Melaleuca squarrosa	-	-	10.26	29.17	5.26	**30.77**	12.50
Monotoca glauca	-	-	-	8.33	-	**30.77**	-
Cenarrhensis nitida	-	-	-	-	-	**30.77**	-
Prionotes cerinthoides	-	-	-	-	-	**30.77**	-
Billardiera longiflora	6.67	12.50	5.13	-	-	**23.08**	-
Bedfordia salicina	6.67	-	7.69	4.17	-	**23.08**	-
Bursaria spinosa	13.33	6.25	15.38	20.83	5.26	**23.08**	-
Pimelea nivea	6.67	-	5.13	8.33	-	**23.08**	-
Clematis montana	-	6.25	7.69	-	-	**23.08**	-
Coprosma quadrifida	6.67	-	-	8.33	-	**23.08**	-
Magnolia stellata	-	12.50	17.95	-	-	**23.08**	-
Acer p. 'Dissectum Atropurpureum'	-	18.75	2.56	4.17	-	**23.08**	-
Fagus sylvatica f. purpurea	-	6.25	7.69	8.33	-	**23.08**	-
Ajuga reptans 'Atropurpurea'	-	18.75	12.82	12.50	5.26	**23.08**	-

Anthemis nobilis	-	6.25	17.95	8.33	10.53	**23.08**	-
Forsythia intermedia	-	12.50	7.69	-	5.26	**23.08**	-
Hosta fortunei	-	18.75	-	-	-	**23.08**	-
Laburnum anagyroides	-	12.50	5.13	4.17	10.53	**23.08**	-
Silene uniflora	-	12.50	-	-	-	**23.08**	-
Tulipa sp.	-	18.75	20.51	4.17	21.05	**23.08**	-
Westringia rubiaefolia	-	12.50	10.26	-	5.26	**23.08**	-
Abies alba	-	6.25	-	4.17	5.26	**23.08**	-
Corylus avellana	-	6.25	-	8.33	5.26	**23.08**	-
Acacia gunnii	-	-	5.13	12.50	-	**23.08**	-
Aristotelia penduncularis	-	-	10.26	4.17	-	**23.08**	-
Athrotaxis cupressoides	-	-	10.26	8.33	-	**23.08**	-
Mahonia lomariifolia	-	-	5.13	4.17	-	**23.08**	-
Melaleuca decussata	-	-	7.69	4.17	-	**23.08**	-
Phyllocladus aspleniifolius	-	-	5.13	4.17	-	**23.08**	-
Podalyria sericea	-	-	5.13	8.33	-	**23.08**	-
Blandfordia punicea	-	-	2.56	-	-	**23.08**	-
Melaleuca incana	-	-	10.26	12.50	5.26	**23.08**	-
Phebalium squameum	-	-	5.13	8.33	5.26	**23.08**	-
Prunus 'Mt. Fuji'	-	12.50	5.13	-	-	**23.08**	12.50
Psoralea pinnata	-	-	7.69	-	-	**23.08**	-
Thuja plicata	-	-	5.13	4.17	10.53	**23.08**	-
Viburnum carlesi	-	-	5.13	-	-	**23.08**	-
Philodelphus coronarius	-	12.50	12.82	-	5.26	**23.08**	12.50
Eucalyptus vernicosa	-	-	-	4.17	-	**23.08**	-
Grevillea obtusiflora cvs.	-	-	17.95	12.50	15.79	**23.08**	12.50
Hakea nodosa	-	-	7.69	20.83	-	**23.08**	12.50
Helichrysum obcordatum	-	-	-	12.50	-	**23.08**	-
Pseudotsuga menziesii	-	-	-	4.17	-	**23.08**	-
Ulex europaeus	-	-	-	4.17	-	**23.08**	-
Ulmus procera	-	-	-	12.50	-	**23.08**	-
Ziera arborescens	-	-	-	4.17	-	**23.08**	-
Leptospermum scoparium var. *eximium*	-	-	-	16.67	5.26	**23.08**	12.50
Weigela florida 'Variegata'	-	-	-	-	5.26	**23.08**	-
Olearia glandulosa	-	-	-	8.33	-	**23.08**	12.50
Arenaria tetraquetra	-	-	-	-	-	**23.08**	-
Pelargonium domesticum	**53.33**	**68.75**	**61.54**	33.33	**68.42**	38.46	**87.50**
Lycopersicon esculentum	20.00	**50.00**	**76.92**	16.67	21.05	-	**87.50**
Beta vulgaris ssp. *cicla*	-	25.00	**61.54**	4.17	10.53	7.69	**75.00**
Curcurbita pepo	6.67	31.25	43.59	16.67	10.53	-	**62.50**
Pisum sativum	6.67	12.50	33.33	8.33	-	-	**62.50**
Acacia floribunda	20.00	-	15.38	29.17	10.53	7.69	**62.50**
Kalanchoe sp	6.67	25.00	12.82	-	10.53	-	**50.00**
Brassica oleracea botrytis	-	12.50	25.64	-	-	-	**50.00**

Prunus domestica	6.67	18.75	43.59	29.17	21.05	7.69	**50.00**
Daucus carota ssp. *sativus*	-	31.25	46.15	4.17	5.26	-	**50.00**
Vicia faba	6.67	12.50	30.77	12.50	-	-	**37.50**
Acacia pravissima	6.67	6.25	28.21	25.00	10.53	15.38	**37.50**
Beta vulgaris ssp. *vulgaris*	-	6.25	20.51	-	-	-	**37.50**
Eucalyptus nicholii	-	12.50	5.13	12.50	5.26	7.69	**37.50**
Physalis peruviana	-	12.50	25.64	4.17	5.26	15.38	**37.50**
Callistemon 'Little John'.	6.67	18.75	5.13	8.33	-	-	**25.00**
Cucumis sativus	-	18.75	20.51	8.33	-	-	**25.00**
Chamaecyparis pisifera cvs	-	31.25	-	4.17	5.26	7.69	**37.50**
Cupressus macrocarpa cvs.	6.67	6.25	7.69	12.50	15.79	23.08	**25.00**
Fuchsia hemsleyana	-	6.25	10.26	-	-	-	**25.00**
Picea abies	6.67	-	7.69	4.17	10.53	-	**25.00**
Alnus acuminatum	6.67	-	2.56	12.50	10.53	7.69	**25.00**
Grevillea robusta	20.00	-	12.82	16.67	5.26	23.08	**25.00**
Foeniculum vulgare	-	12.50	7.69	4.17	5.26	7.69	**25.00**
Raphanus sativus	-	-	15.38	4.17	-	-	**25.00**
Cupressus macrocarpa 'Horizontalis Aurea'	-	6.25	-	-	5.26	7.69	**25.00**
Gleditsia triacanthos	-	-	10.26	-	5.26	-	**25.00**
Mentha x piperata var. *citrata*	-	-	15.38	-	5.26	-	**25.00**
Prostanthera rotundifolia	-	-	20.51	20.83	5.26	15.38	**25.00**
Streptocarpus Hybrid	-	-	5.13	-	-	-	**25.00**
Leptospermun sp.	-	-	-	4.17	-	-	**25.00**
Grevillea rosmarinifolia 'Canberra Gem'	-	-	-	-	5.26	-	**25.00**
Thuja plicata fastigata	-	-	-	-	10.53	-	**25.00**

APPENDIX 3

Species observed in gardens

Nomenclature follows:
[1] Page and Olds, 1998
[2] Brickell, 2002
[3] Hniatuk, 1990
[4] Lord, 2006
[5] Cultivars, nomenclature not applicable.

Abelia chinensis	1	*Acacia riceana*	3	*Achillea millefolium*	1	*Agastachys odorata*	3	*Allocasuarina monilifera*	3	*Anemone hupehensis*	1
Abelia grandiflora	1	*Acacia siculiformis*	3	*Achillea filipendulina*	1	*Agave attenuata*	1	*Allocasuarina palludosa*	3	*Anenome nemorosa*	1
Abies alba	1	*Acacia* sp.	3	*Achillea ptarmica*	1	*Agave angustifolia marginata*	1	*Allocasuarina verticillata*	3	*Anenome pulsatilla*	1
Abies balsamica	1	*Acacia speciosa*	3	*Achillea tomentosa*	1	*Agave schidigera*	1	*Alonsoa warscewiczii*	2	*Anemone sylvestris*	1
Abies sp.	1	*Acacia spinulosa*	3	*Acmena smithii*	3	*Agave* sp.	1	*Alopecurus pratensis*	1	*Anemone x hybrida*	1
Abutilon megapotamicum	1	*Acacia stricta*	3	*Aconitum carmichaelii*	1	*Ageratum houstonianum*	1	*Alnus acuminatum*	1	*Anethum graveolens*	1
Abutilon x hybridum	1	*Acacia suavolens*	3	*Aconitum napellus*	1	*Agonis flexuosa*	3	*Alnus glutinosa*	1	*Angelica archangelica*	1
Acacia axillaris	3	*Acacia terminalis*	3	*Acorus gramineus*	1	*Agonis flexuosa* 'Nana'	5	*Aloe aristata*	1	*Angelica gigas*	1
Acacia baileyana	3	*Acacia verniciflua*	3	*Acradenia frankliniae*	3	*Agonis flexuosa* 'Variegata'	5	*Aloe humilis*	1	*Anigozanthos flavidus*	3
Acacia boormanii	3	*Acacia verticillata*	3	*Actinidia chinensis*	1	*Agonis linearifolia*	3	*Aloe juvenna*	1	*Anigozanthos menziesii*	3
Acacia cognata	3	*Acacia vestita*	3	*Actinidia deliciosa*	1	*Agrimonia eupatoria*	1	*Aloe mitriformis*	1	*Anigozanthos pulcherrimus*	3
Acacia dealbata	3	*Acaena novae-zelandiae*	3	*Adenandra uniflora*	1	*Agrostema githago*	1	*Aloe rauhii*	1	*Anigozanthos rufus*	3
Acacia elata	3	*Acalypha reptans*	4	*Adenanthos cygnorum*	3	*Ajania pacifica*	1	*Aloe striata*	1	*Anigozanthos* sp.	3
Acacia flocktoniae	3	*Acanthus mollis*	1	*Adenanthos detmoldii*	3	*Ajuga reptans*	1	*Aloe tenuior*	1	*Anigozanthos viridis* subsp. *viridis*	3
Acacia floribunda	3	*Acanthus spinosus*	1	*Adenophora bulleyana*	1	*Ajuga reptans* 'Atropurpurea'	5	*Aloe vera*	1	*Anisodontea capensis*	1
Acacia gracilifolia	3	*Acca selowiana*	2	*Adiantum aethiopicum*	1	*Alcea rosea*	1	*Alstroemeria aurea*	1	*Anodopetalum biglandulosum*	3
Acacia gunnii	3	*Acer campbellii*	4	*Adiantum capillis- veneris*	1	*Alchemilla mollis*	1	*Alstroemeria peruviana* cvs.	5	*Anopterus glandulosus*	3
Acacia howittii	3	*Acer davidii*	1	*Adiantum formosum*	1	*Allium ampeloprasum*	1	*Alyogyne huegelii*	3	*Anthemis cretica*	1
Acacia iteaphylla	3	*Acer griseum*	1	*Adiantum raddianum*	1	*Allium cepa*	1	*Alyxia buxifolia*	3	*Anthemis nobilis*	1
Acacia longifolia	3	*Acer grosseri hersii*	2	*Adromischus maculatus*	1	*Allium cepa* var. *aggregatum*	1	*Amanita muscaria*	1	*Anthemis tinctoria*	1
Acacia longifolia ssp. *sophorae*	3	*Acer hookerii*	4	*Aechmea gamosepala*	1	*Allium christophii*	1	*Amaranthus cordatus*	1	*Anthericum liliago*	1
Acacia longissima	3	*Acer japonicum acontifolium*	1	*Aeonium arboreum*	1	*Allium fistulosum*	1	*Amaryllis belladonna*	1	*Anthriscus cerefolium*	1
Acacia mearnsii	3	*Acer negundo*	1	*Aeonium atropurpureum*	1	*Allium oleraceum*	1	*Amaryllis belladonna alba*	1	*Anthurium andraeanum*	1
Acacia melanoxylon	3	*Acer palmatum*	1	*Aeonium undulatum*	1	*Allium porrum*	1	*Amelanchier canadensis*	1	*Antirrhinum majus*	1
Acacia mucronata	3	*Acer p.* 'Dissectum Atropurpureum'	5	*Aeonium* sp.	1	*Allium sativum*	1	*Ammi majus*	1	*Aotus ericoides*	3
Acacia myrtifolia	3	*Acer palmatum* cvs.	5	*Aesculus hippocastananum*	1	*Allium schoenoprasum*	1	*Ammophila arenaria*	3	*Apium graveolens*	1
Acacia notabilis	3	*Acer platanoides*	1	*Agapanthus* 'Peter Pan'	5	*Allium triquetrum*	1	*Amperea xiphoclada*	3	*Apium graveolens* var. *dulce*	1
Acacia podalyrifolia	3	*Acer pseudoplatanus*	1	*Agapanthus praecox* subsp. *orientalis*	1	*Allium tuberosum*	1	*Anchusa azurea*	3	*Apium rapaceum*	1
Acacia pravissima	3	*Acer rufinerve*	1	*Agapetes incurvata*	1	*Allocasuarina crassa*	3	*Anchusa capensis*	3	*Apodasmia brownii*	3
Acacia pycnantha	3	*Acer saccharum*	1	*Agastache aurantica*	1	*Allocasuarina duncanii*	3	*Andromeda polifolia*	1	*Aponogeton distachyus*	1
Acacia retinodes	3	*Acer* sp.	1	*Agastache foeniculum*	1	*Allocasuarina littoralis*	3	*Anenome coronaria*	1	*Aptenia cordifolia*	1

Aquilegia alba 1
Aquilegia atrata 1
Aquilegia caerulea 1
Aquilegia vulgaris cvs. 1
Aquilegia vulgaris 'Nora Barlow' 5
Arabis caucasica 1
Araucaria araucana 1
Araucaria bidwillii 1
Araucaria heterophylla 1
Arbutus unedo 1
Arctotis fastuosa 1
Arctotis hirsuta 1
Arctotis hybridum 1
Arenaria balearica 1
Arenaria montana 1
Arenaria tetraquetra 1
Argyranthemum frutescens 1
Arisaema sp. 1
Arisarum proboscideum 1
Aristotelia penduncularis 3
Armeria juniperifolia 1
Armeria maritima 1
Armoracia rusticana 1

Acrotriche serrulata 3
Artemisia absinthium 1
Artemisia arborescens 1
Artemesia caucasica 1
Artemesia dracunculus 1
Artemisia ludoviciana 1
Arthropodium cirrhatum 1
Arthropodium strictum 1
Arum creticum 1
Arum italicum 1
Arum maculatum 1
Arundo donax 1
Asarina procumbens 1
Asclepias fruticosa 1
Asparagus asparagoides 1
Asparagus densiflorus 1
Asparagus myriocladus 1
Asparagus officinalis 1

Asparagus plumosa 1
Asparagus setaceus 1
Asperula odorata 1
Asphodelus albus 1
Aspidistra elatior 1
Asplenium australaisicum 3
Asplenium bulbiferum 3
Asplenium daucifolium 3
Asplenium hookerianum 3
Asplenium nidus 3
Asplenium scolopendrium 3
Asplenium surrogatum 3
Asplenium terrestre 3
Astartea fascicularis 3
Astartea 'Winter Pink' 5
Astelia alpina 1
Astelia chathamica 1
Asteranthera ovata 2
Aster lateriflorus 1
Aster linosyris 1
Aster novae-angliae 1
Aster novi-belgii 1

Aster sedifolius 1
Asterotricheron discolor 3
Astilbe, 'Arendsii Hybrids', 5
Astilbe chinensis 1
Astrantia major 1
Astroloma humifusum 3
Atherosperma moschatum 3
Athrotaxis cupressoides 3
Athrotaxis laxifolia 3
Athrotaxis selaginoides 3
Atriplex cinerea 1
Atriplex hortensis 1
Austrostipa stipoides 3
Aubrieta x cultorum 1
Aubrieta deltoidea 1
Aucuba japonica 1
Aucuba japonica 'Variegata' 5
Austrodanthonia setacea 3

Austromyrtus fragrantissima 3
Avena sativa 3
Azalea indica 1
Azalea kurume 1
Azalea x mollis 1
Azara lanceolata 1
Azara microphylla 1
Azara microphylla 'Variegata' 5
Azolla filiculoides 3
Azorina violalli 2
Babiana stricta 1
Bacopa monniera 3
Baeckea astarteoides 3
Baeckea gunniana 3
Baeckea imbricata 3
Baeckea prostrata 3
Baeckea ramosissima 3
Baeckea sp. 3
Baeckea virgata 3
Baloskion australe 3
Baloskion tetraphyllus 3
Bambusa sp. 1
Banksia brownii 3

Banksia coccinea 3
Banksia ericifolia 3
Banksia integrifolia 3
Banksia marginata 3
Banksia serrata 3
Banksia spinulosa 3
Banksia spinulosa var. *spinulosa* 3
Bauera rubioides 3
Beaucarnea recurvata 1
Bedfordia linearis 3
Bedfordia salicina 3
Begonia coccinea 1
Begonia fuchsioides 1
Begonia , 'Rex cultorum Group' 5
Begonia sempervirens 1
Begonia, 'Tuberhybrida Group' 5
Bellendena montana 3
Bellevalia paradoxa 2

Bellis perennis 1
Berberidopsis corallina 1
Berberis darwinii 1
Berberis thunbergii 'Atropurpurea' 5
Berberis x stenophylla 1
Bergenia cordifolia 1
Bergenia stracheyii 1
Bergenia x schmidtii 1
Beta vulgaris ssp. *cicla* 1
Beta vulgaris ssp. *vulgaris* 1
Betula albosinensis 1
Betula nigra 1
Betula papyrifera 1
Betula pendula 1
Betula pendula 'Youngii' 5
Betula populifolia 1
Betula utilis var. *Jacquemontii* 1
Beyeria leschenaultii 3
Bidens ferulifolia 3
Billardiera longiflora 3
Billbergia nutans 1
Blandfordia punicea 3
Blechnum cartilagineum 3

Blechnum fluviatale 3
Blechnum nudum 3
Blechnum penna-marina 3
Blechnum vulcanicum 3
Blechnum wattsii 3
Bletilla striata 1
Boorago officinalis 1
Boronia anemonifolia 3
Boronia citriodora 3
Boronia cvs. 5
Boronia deanii 3
Boronia denticulata 3
Boronia heterophylla 3
Boronia megastigma 3
Boronia molloyae 3
Boronia muellerii 3
Boronia obovata 3
Boronia pinnata 3

Bougainvillea glabra 1
Bouvardia longiflora 1
Boykinia aconitifolia 1
Brachyglottis brunonis 3
Brachycome iberidifolia 3
Brachycome multifida 3
Brachycome segmentosa 3
Brachysema celsianum 3
Bracteantha bracteata 1
Bracteantha subundulata 1
Brassica napus pabularia 1
Brassica napus rapifera 1
Brassica oleracea acephala 1
Brassica oleracea botrytis 1
Brassica oleracea capitata 1
Brassica oleracea gemmifera 1
Brassica oleracea italica 1
Brassica rapa rapifera 1
Brassica rapa ssp.*chinensis* 1
Brassica sp., 'Mustard Greens' 5
Brodiaea laxa 1
Bromelia balansae 1
Brunonia australis 3

Brunfelsia australis 1
Brunnera macrophylla 1
Brunsvigia josephinae 1
Brugmansia x candida 1
Buddleja alternifolia 1
Buddleja auriculata 1
Buddleja davidii 1
Buddleja globosa 1
Buddleja x weyeriana 1
Buglossoides purpurocaerulea 1
Bulbine bulbosa 3
Bulbine glauca 3
Bulbinella hookerii 3
Bursaria spinosa 3
Buxus microphylla 1
Buxus sempervirens 1
Buxus sempervirens 'Marginata' 5
Cakile maritima 3

Caladenia carnea 3
Calendula officinalis 1
Calathea zebrina 1
Calceolaria, 'Herbeohybrida Group' 1
Callicarpa bodinieri 1
Callistemon 'Captain Cook' 5
Callistemon citrinus cvs. 5
Callistemon 'Dawson River Weeper' 5
Callistemon 'Endeavour' 5
Callistemon 'Gawler Hybrid' 5
Callistemon kenmorrisonii 3
Callistemon 'Kings Park Special'. 5
Callistemon 'Little John'. 5
Callistemon pallidus 3
Callistemon palludosus 3
Callistemon phoeniceus 3
Callistemon pungens 3
Callistemon sp. 3
Callistemon speciosus 3
Callistemon viminalis cvs. 3
Callistemon viminalis 'Harkness' 5
Callistemon 'Violaceus' 5
Callistemon viridiflorus 3

Callistephus chinensis, Milady Series 5
Callitris oblonga 3
Callitris rhomboidea 3
Calytrix sp. 3
Calytrix tetragona 3
Calluna vulgaris cvs. 5
Calocedrus decurrens 1
Calocephalus citreus 3
Calochlaena dubia 3
Calothamnus quadrifidus 3
Calothamnus sanguineus 3
Caltha palustris 1
Calystegia sepium 1
Camassia leichtlinii 1
Camellia japonica 1
Camellia reticulata 1
Camellia sasanqua 1
Campanula alliarifolia 1

Campanula barbata 1
Campanula carpatica 1
Campanula lactiflora 1
Campanula latifolia 1
Campanula longistyla 1
Campanula medium 1
Campanula persicifolia 1
Campanula portenschlagiana 1
Campanula poscharskyana 1
Campanula rapunculoides 1
Campanula sp. 1
Campsis x tagliabuana 1
Canna 'Tropicana' 5
Canna x generalis 1
Cantua buxifolia 1
Capsicum annuum 'Conoides group' 5
Capsicum annuum 'Grossum' 5
Cardiocrimun giganteum 1
Carex appressa 3
Carex buchananii 3
Carex flagifera 1
Carex fuirenoides 1
Carex petrei 1
Carex sp. 1
Carex tasmanica 3
Carex tereticaulis 1
Carpobrotus edulis 1
Carpobrotus rossii 3
Carum carvi 1
Carpobrotus sp. 1
Cassia colluteoides 1
Cassia sp. 1
Cassinia aculeata 1
Cassytha racemosa 3
Castanea dentata 1
Castanea sativa 1
Catananche caerulea 1
Catharanthus roseus 1
Ceanothus griseus 1
Ceanothus sp. 1
Ceanothus thyrsiflorus 1
Cedronella canariensis 1
Cedrus atlantica 1
Cedrus deodara 1
Cedrus libanii 1
Cedrus libanii 'Nana' 5
Celmisia asteliifolia 3
Celmisia semicordata 3
Centaurea cineraria 1
Centaurea cyanus 1
Centaurea hypoleuca 1
Centaurea montana 1
Centaurea sp. 1
Centranthus albiflorus 1
Centranthus ruber 1
Cerastium tomentosum 1
Ceratoptalum gummiferum 3
Ceratostigma plumbaginoides 1
Cercidiphyllum japonicum 1
Cercis siliquastrum 1
Cerinthe major 1
Ceropegia linearis 1
Cestrum elegans 1
Cestrum nocturnum 1
Chaenomeles japonica 1
Chaenomeles speciosa 1
Chaenomeles x superba 1
Chamaecyparis cvs. 5
Chamaecyparis funebris 1
Chamaecyparis lawsoniana cvs. 5
Chamaecyparis obtusa cvs. 5
Chamaecyparis pisifera cvs 5
Chamaecyparis thyoides 1
Chamaedorea atrovirens 1
Chamaedorea elegans 1
Chamaeleum nobile 1
Chamaerops humilis 1
Chamelaucium ciliatum 3
Chamelaucium floriferum 3
Chamelaucium sp. 3
Chamelaucium uncinatum 3
Cheilanthes austrotenuifolia 3
Cheiranthus cheiri 1
Cheiranthus mutabilis 1
Cheiranthus sp. 1
Chiloglottis gunnii 3
Chionodoxa forbesii 1
Chlorophytum comosum 'Variegatum' 5
Choisya ternata 1
Chorizima ilicifolium 3
Chrysanthemoides monilifera 1
Chrysanthemum carinatum 1
Chrysanthemun coronarium 1
Chrysanthemun x grandiflorum 1
Chrysocephalum apiculatum 3
Chrysocephalum baxterii 3
Cichorium endivia 1
Cichorium intybus 1
Cimicifuga japonica 1
Cissus rhombifolia 1
Cistus ladanifer 1
Cistus laurifolius 1
Cistus purpureus 1
Cistus salviifolius 1
Cistus sp. 1
Cistus x obtusifolius 1
Cistus x pulverulentis 1
Citrus aurantifolia 1
Citrus hystrix 1
Citrus limon 1
Citrus paradisi 1
Citrus reticulata 1
Citrus sinensis 1
Citrus x tangelo 1
Clarkia amoena 1
Claytonia perfoliata 1
Clematis aristata 3
Clematis armandii 1
Clematis 'Dr. Ruppel' 5
Clematis gentianoides 1
Clematis 'Jackmanii' 5
Clematis montana 3
Clematis montana 'Rubens' 5
Clematis paniculata 1
Clematis sp. 1
Cleome hassleriana 1
Clerodendrum thomsoniae 1
Clethra arborea 1
Clidemia hirta 1
Clivia miniata 1
Clivia nobilis 1
Coleonema pulchrum 1
Colchicum agrippinum 1
Colchicum autumnale 1
Colchicum byzantinum 1
Colchicum speciosum 1
Colocasia esculenta 1
Colquhounia coccinea 1
Comesperma volubile 3
Conium maculatum 3
Convallaria majalis 1
Convolvulus cneorum 1
Convolvulus mauritanicus 1
Convolvulus sabatius 1
Convolvulus tricolour 1
Coprosma greelii 1
Coprosma hirtella 3
Coprosma kirkii 1
Coprosma lucida 3
Coprosma moorei 3
Coprosma nitida 3
Coprosma quadrifida 3
Coprosma repens 1
Coprosma repens 'Variegata' 5
Coprosma robusta 1
Coprosma sp. 1
Cordyline australis cvs. 5
Cordyline australis 'Purpurea' 5
Cordyline fruticosa cvs 1
Coreopsis lanceolata 1
Coreopsis tinctoria 1
Coriandrum sativum 1
Cornus alba 1
Cornus canadensis 1
Cornus capitata 1
Cornus florida 1
Cornus kousa chinensis 1
Cornus mas 1
Corokia cotoneaster 1
Correa alba 3
Correa backhouseana 3
Correa baeuerlenii 3
Correa decumbens 3
Correa 'Dusky Bells' 5
Correa glabra 3
Correa lawrenciana 3
Correa 'Mannii' 5
Correa pulchella 3
Correa reflexa 3
Correa schlechtendalii 3
Cortaderia sp. 1
Corydalis wilsonii 1
Corylus avellana 1
Corynocarpus laevigata 1
Cosmos bipinnatus 1
Cosmos sulphureus 1
Cotinus coggygria 1
Cotoneaster horizontalis 1
Cotoneaster serratina 1
Cotoneaster sp. 1
Cotula australis 3
Cotula coronopifolia 3
Cotyledon orbiculare 1
Craspedia alpina 3
Craspedia glauca 3
Crassula albiflora 1
Crassula arborescens 1
Crassula multiclava 1
Crassula ovata 1
Crassula ovata'Variegata' 5
Crassula perfoliata var. *falcata* 1
Crassula perforata 1
Crassula pubescens 1
Crassula sp. 1
Crataegus calpodendron 1
Crataegus laciniata 1
Crataegus laevigata 1
Crataegus monogyna 1
Crataegus phaenopyrum 1
Crinodendron hookeranum 1
Crinodendron patagua 1
Crinum asiaticum 1
Crinum moorei 1
Crinum x powellii 1
Crocosmia aurea 1
Crocosmia pottsii 'Solfatare' 5
Crocosmia masonorum 1
Crocosmia x crocosmiifolia 1
Crocus chrysanthus 1
Crocus medius 1
Crocus pulchellus 1
Crocus sativus 1
Crocus sieberi 1
Crocus sp. 1
Crocus tommasinianus 1
Crocus vernus 1
Crotalaria cunninghamii 1
Crowea exalata 3
Cryptomeria japonica 1
Ctenanthe oppenheimiana 1
Cucumis sativus 1
Cuphea hyssopifolia 1
Cuphea ignea 1
x Cupressocyparis 'Castlewellan Gold' 5
x Cupressocyparis leylandii 1
Cupressus arizonica 1
Cupressus glabra cvs 5
Cupressus macrocarpa cvs. 5
Cupressus macrocarpa 'Horizontalis Aurea' 5
Cupressus sempervirens cvs 5
Cupressus sempervirens 'Swanes Golden' 5
Cupressus sempervirens var. *horizontalis* 1
Cupressus sempervirens var.*stricta* 1
Cupressus sp. 1
Cucurbita maxima 1

Cucurbita moschata	1	*Danthonia caespitosa*	3	*Dicentra* sp.	1	*Dryopteris felix-mas*	1	*Epidendrum ibaguense*	1	*Eucalyptus camaldulensis*	3
Cucurbita pepo	1	*Danthonia* sp.	3	*Dicentra spectabilis*	1	*Dryopteris marginalis*	1	*Epimedium perralderianum*	1	*Eucalyptus citriodora*	3
Cyathea australis	3	*Daphne caucasica*	1	*Dichelachne crinita*	3	*Dryopteris* sp.	1	*Eremophila glabra*	3	*Eucalyptus cladocalyx*	3
Cyathea brownii	3	*Daphne cneorum*	1	*Dichondra repens*	1	*Duchesnea indica*	1	*Eremurus* sp.	1	*Eucalyptus coccifera*	3
Cyathea cooperii	3	*Daphne genkwa*	1	*Dichopogon strictus*	3	*Duranta repens*	1	*Erica cerinthoides*	1	*Eucalyptus conferruminata*	3
Cyathea medullaris	3	*Daphne laureola*	1	*Dicksonia antarctica*	3	*Dymondia margaretae*	1	*Erica erigena*	1	*Eucalyptus cordata*	3
Cyathea tomentissima	3	*Daphne odora*	1	*Dicksonia fibrosa*	3	*Dypsis lutescens*	2	*Erica linnaeoides*	1	*Eucaluptus crenulata*	3
Cyathodes divaricata	3	*Daphne x burkwoodii*	1	*Dicksonia squarrosa*	3	*Echeveria agavoides corderoyi*	1	*Erica lusitanica*	1	*Eucalyptus delagatensis*	3
Cyathodes glauca	3	*Daphne x napolitana*	1	*Dierama pulcherrimum*	1	*Echeveria domingo*	1	*Erica melanothera*	1	*Eucalyptus ficifolia*	3
Cyathodes juniperina	3	*Darwinia citriodora*	3	*Dietes bicolor*	1	*Echeveria elegans*	1	*Erica* sp.	1	*Eucalyptus globulus*	3
Cyclamen coum	1	*Daucus carota*	1	*Dietes iridiodes*	1	*Echeveria* 'Doris Taylor'	5	*Erica tetralix*	1	*Eucalyptus gunnii*	3
Cyclamen hederifolium	1	*Daucus carota* ssp. *sativus*	1	*Digitalis ferruginea*	1	*Echeveria fasiculata*	1	*Erica wilmorei*	1	*Eucalyptus kitsoniana*	3
Cyclamen persicum	1	*Davidia involucrata*	1	*Digitalis grandiflora*	1	*Echeveria imbricata*	1	*Erica x darleyensis*	1	*Eucalyptus lehmanii*	3
Cyclamen repandum	1	*Daviesia latifolia*	3	*Digitalis purpurea*	1	*Echeveria lilacina*	1	*Erigeron foliosus*	1	*Eucalyptus leucoxylon*	3
Cydonia oblonga	1	*Delairea odorata*	1	*Dillwynia glaberrima*	3	*Echeveria lyndsayana*	1	*Erigeron glaucus*	1	*Eucaluptus longifolia*	3
Cymbidium sp.	1	*Delosperma lehmannii*	1	*Dimorphotheca pluvialis*	1	*Echeveria multicaulis*	1	*Erigeron karvinskianus*	1	*Eucalyptus morrisbyi*	3
Cymbopogon citratus	1	*Delphinium elatum*	1	*Diospyros kaki*	1	*Echeveria orbiculata*	1	*Erigeron speciosus*	1	*Eucalyptus neglecta*	3
Cynoglossum amibile	1	*Delphinium grandiflorum*	1	*Dipelta floribunda*	1	*Echeveria pulvinata*	1	*Eriobotrya japonica*	1	*Eucalyptus nicholii*	3
Cynara scolymus	1	*Dendranthema x grandiflorum*	1	*Diplarrena latifolia*	3	*Echeveria secunda*	1	*Eriostemon myoporoides*	3	*Eucalyptus nitens*	3
Cyperus albostriatus	1	*Dendrobium kingianum*	1	*Diplarrena moraea*	3	*Echeveria* sp.	1	*Eriostemon verrucosus*	3	*Eucalyptus nitida*	3
Cyperus alternifolia	1	*Dendrobium* sp	1	*Diplolaena dampierii*	3	*Echinacea purpurea*	1	*Erodium cheilanthefolium*	1	*Eucalyptus obliqua*	3
Cyperus involucratus	1	*Dennstaedtia davallioides*	3	*Dipogon lignosus*	1	*Echium candicans*	1	*Erodium manescaui*	1	*Eucalyptus ovata*	3
Cyperus lucidus	1	*Desfontainia spinosa*	1	*Diselma archeri*	3	*Echium pininana*	1	*Eruca vesicaria* ssp. *sativa*	1	*Eucaluptus parvifolia*	3
Cyperus papyrus	1	*Deutzia gracilis*	1	*Disphyma crassifolium*	3	*Echium vulgare*	1	*Eryngium maritimum*	1	*Eucalyptus pauciflora*	3
Cyphomandra betacea	1	*Deutzia scabra*	1	*Distictis buccinatoria*	1	*Echium wildpretii*	1	*Eryngium* sp.	1	*Eucalyptus perriniana*	3
Cyrtanthus elatus	1	*Deutzia x elegantissima*	1	*Dodonea filiformis*	3	*Edgeworthia chrysantha*	1	*Eryngium variifolium*	1	*Eucalyptus preissiana*	3
Cytisus battandieri	1	*Deutzia x rosea*	1	*Dodonea viscosa* ssp. *spatulata*	3	*Einadia nutans*	3	*Eryngium x oliverianum*	1	*Eucalyptus pulchella*	3
Cytisus 'Burkwoodii'	5	*Dianella brevicaulis*	3	*Dodonea viscosa* var. *purpurea*	3	*Elaeagnus pungens*	1	*Erythronium californicum*	1	*Eucalyptus regnans*	3
Cytisus palmensis	1	*Dianella ensifolia*	3	*Donatia novae-zelandiae*	3	*Embothrium coccineum*	1	*Erythronium dens-canis*	1	*Eucalyptus regnans x obliqua*	3
Cytisus scoparius	1	*Dianella revoluta*	3	*Doodia australis*	3	*Endymion non-scriptus*	1	*Erythronium oregonum*	1	*Eucalyptus risdonii*	3
Cytisus sp.	1	*Dianella tasmanica*	3	*Doodia caudata*	3	*Epacris exserta*	3	*Erythronium revolutum*	1	*Eucalyptus rubida*	3
Cytisus scoparius f. andreanus	1	*Dianthus barbatus*	1	*Doodia media*	3	*Epacris gunnii*	3	*Erythronium* sp.	1	*Eucalyptus saxatilus*	3
Cytisus supranubius	1	*Dianthus caryophyllus*	1	*Doodia* sp.	3	*Epacris impressa*	3	*Erythronium tuolumnense*	1	*Eucalyptus sideroxylon*	3
Cytisus x delamooriei	1	*Dianthus* cvs.	1	*Draba aizoides*	1	*Epacris longiflora*	3	*Escallonia x exoniensis*	1	*Eucalyptus* sp.	3
Cyrtomium falcatum	1	*Dianthus erinaceus*	1	*Draceana marginata*	1	*Epacris perspicua*	3	*Escallonia rubra*	1	*Eucalyptus tenuiramis*	3
Daboecia cantabrica	1	*Dianthus deltoides*	1	*Dracophyllum minimum*	1	*Epacris petrophila*	3	*Escallonia* sp.	1	*Eucalyptus torelliana*	3
Dahlia cvs.	1	*Diasca barberae*	1	*Drosanthemum floribundum*	1	*Epacris serpyllifolia*	3	*Escholtzia californica*	1	*Eucaluptus tricarpa*	3
Dahlia imperialis	1	*Diasca rigescens*	1	*Drosanthemun speciosum*	1	*Epacris* sp.	3	*Eucalyptus alpina*	3	*Eucalyptus vernicosa*	3
Dampiera diversifolia	3	*Diasca vigilis*	1	*Dryandra formosa*	3	*Epacris tasmanica*	3	*Eucalyptus amygdalina*	3	*Eucalyptus viminalis*	3
Dampiera stricta	3	*Dicentra cucullaria*	1	*Drymophila cyanocarpa*	3	*Epacris stuartii*	3	*Eucalyptus brookeriana*	3	*Eucomis comosa*	1
Dampiera trigona	3	*Dicentra formosa*	1	*Dryopteris erythrosora*	1	*Epacris virgata*	3	*Eucalyptus caesia* ssp.*caesia*	3	*Eucryphia cordifolia*	3

Eucryphia glutinosa 3
Eucryphia lucida 3
Eucryphia milliganii 3
Eucryphia moorei 3
Eucryphia x intermedia 3
Euonymus japonicus 1
Eupatorium fistulosum 1

Euphorbia amygdaloides 1
Euphorbia amygdaloides 'Rubra' 5
Euphorbia characias 1
Euphorbia dulcis 1
Euphorbia x martinii 1
Euphorbia myrsinites 1
Euphorbia pulcherrima 1
Euphorbia rigida 1
Euphorbia robbiae 1
Euphorbia seguieriana subsp. *niciciana* 1
Euphorbia sp 1
Euphorbia woodsii 1
Euryops athanasia 1
Euryops chrysanthemoides 1
Euryops pectinatus 1
Euryops virgineus 1
Eustoma grandiflorum 1
Ewartia meredithae 3
Exocarpus cupressiformis 3
Exocarpus strictus 3
Fagus sylvatica 1
Fagus sylvatica f. purpurea 1
Fatsia japonica 1
Felicia aethiopica 1
Felicia amelloides 1
Felicia angustifolia 1
Felicia fruticosa 1
Festuca glauca 1
Ficus benjamina 1

Ficus elastica 1
Ficus carica 1
Ficus rubiginosa 3
Ficus sp. 1
Filipendula rubra 1
Filipendula ulmaria 1
Filipendula vulgaris 1
Foeniculum vulgare 1
Forsythia intermedia 1
Forsythia suspensa 1
Fortunella japonica 1
Fortunella margarita 1

Fragaria x ananassa 1
Fragaria chiloensis 1
Fragaria indica 1
Fragaria vesca 1
Francoa ramosa 1
Francoa sonchifolia 1
Fraxinus angustifolia 1
Fraxinus excelsior 1
Fraxinus excelsior 'Aurea' 5
Fraxinus ornus 1
Fraxinus raywoodii 1
Freesia lactea 1
Freesia x hybrida 1
Fritillaria glauca 1
Fritillaria meleagris 1
Fritillaria pudica 1
Fritillaria sp. 1
Fritallaria uva-vulparis 1
Fuchsia bolivana 1
Fuchsia fulgens 1
Fuchsia hemsleyana 1
Fuchsia magellanica 1
Fuchsia paniculata 1
Fuchsia procumbens 1

Fuchsia triphylla cvs. 5
Fuchsia x hybrida 1
Gahnia grandis 3
Gahnia rodwayii 3
Gaillardia x grandiflora 1

Galanthus elwesii 1
Galanthus flore plena 1
Galanthus nivalis 1
Galium aparine 1
Galium odoratum 1
Galtonia candicans 1
Gardenia augusta 1
Garrya elliptica 1
Gasteria croucheri 1
Gasteria neliana 1
Gasteria sp. 1
Gastrodia sesamoides 3

Gasworthia tegeliana 1
Gaultheria hispida 3
Gaultheria procumbens 3
Gaultheria shallon 3
Gaultheria tasmanica 3
Gaura lindheimeri 1
Gazania x hybrida 1
Gelsemium sempervirens 1
Genista monspessulana 1

Genista x spachiana 1
Gentiana acaulis 1
Geranium 'Ann Folkard' 5
Geranium himalayense 1
Geranium incanum 1
Geranium macrorrhizum 1
Geranium maculatum 1
Geranium madarense 1
Geranium orientalitibeticum 1
Geranium palmatum 1
Geranium phaeum 1
Geranium pratense 1
Geranium renardii 1
Geranium robertianum 1
Geranium sanguineum 1

Geranium sessiflorum novae-zelandiea 1
Geranium soboliferum 1
Geranium sp. 1
Geranium x cantabrigense 1
Gerbera jamesonii 1

Geum borisii 1
Geum coccineum 1
Geum montanum 1
Ginkgo biloba 1
Gladiolus callianthus 1
Gladiolus carneus 1
Gladiolus caryophyllaceus 1
Gladiolus communis 1
Gladiolus, 'Grandiflorus Group'. 5
Gladiolus, 'Nanus Group'. 5
Gladiolus x colvillei 1

Glechoma hederacea 1

Gleditsia triacanthos 1
Godetia grandiflora 1
Gomphocarpus physocarpus 1
Gonocarpus montanus 3
Goodenia lanata 3
Goodenia ovata 3
Gordonia axillaris 1
Grammitis billardieri 3
Grammitis sp. 3

Graptopetalum paraguayense 1
Graptoveria cvs. 5
Grevillea acanthifolia 3
Grevillea arenaria 3
Grevillea australis cvs. 5
Grevillea 'Clearview David' 5
Grevillea curviloba ssp.*curviloba* 3
Grevillea dallachiana 3
Grevillea endlicheriana 3
Grevillea 'Forest Rambler' 5
Grevillea gaudichaudi 3
Grevillea hookeriana cvs. 3
Grevillea ilicifolia 3
Grevillea 'Ivanhoe' 5
Grevillea johnsonii 3

Grevillea lanigera 3
Grevillea lavendulacea x lanigera 3
Grevillea longistyla 'Firesprite' 5
Grevillea manglesii ssp *manglesii* 3
Grevillea 'Mt.Tamboritha' 5

Grevillea obtusiflora cvs 3
Grevillea oleoides 3
Grevillea olivaceae cvs. 3
Grevillea poorinda 'Blondie' 5
Grevillea poorinda 'Constance' 5
Grevillea poorinda 'Royal Mantle' 5
Grevillea renwickiana 3
Grevillea repens 3
Grevillea rivularis 3
Grevillea robusta 3
Grevillea 'Robyn Gordon' 5

Grevillea rosmarinifolia 3

Grevillea rosmarinifolia 'Canberra Gem' 5
Grevillea sp. 3
Grevillea 'Superb' 5
Grevillea victoriea 3
Grevillea thelemanniana 3
Grevillea 'Winparra Gold' 5
Gunnera chilensis 1
Gunnera manicata 1
Gymnoschoenus sphaerocephalus 3

Gynatrix pulchella 3
Gypsophila elegans 1
Gypsophila paniculata 1
Hakonechloa macra 'Aureola' 5
Haemanthus coccineus 1
Hakea epiglottis 3
Hakea laurina 3
Hakea lissosperma 3
Hakea megadenia 3
Hakea nodosa 3
Hakea petiolaris 3
Hakea salicifolia 3
Hakea sericea 3
Hakea sp. 3
Hakea teretifolia 3

Hamamelis mollis 1
Hamamelis x intermedia 1
Hardenbergia comptoniana 3
Hardenbergia violacea 3
Hatiora rosea 1

Hatiora salicornioides 1

Hebe buxifolia 1
Hebe 'Hartii' 5
Hebe 'Inspiration' 5
Hebe 'La Seduisante' 5
Hebe pinguifolia 'Pagei' 5
Hebe 'Quicksilver' 5
Hebe salicifolia 1
Hebe sp. 1
Hebe speciosa 1
Hebe 'Wiri Cloud' 5
Hebe 'Wiri Joy' 5

Hedera canariensis 1
Hedera helix 1
Hedera helix 'Variegatum' 5
Hedychium gardnerianum 1
Helianthus annus 1
Helianthus tuberosus 1
Helianthus x multiflorus 1
Helianthus salicifolius 1
Helichrysum italicum 1
Helichrysum leucopsideum 1
Helichrysum milliganii 3
Helichrysum obcordatum 3
Helichrysum petiolare 3
Helichrysum rosmarinifolia 1
Helichrysum scorpioides 3
Helichrysum sp. 1
Helictotrichon sempervirens 1
Heliotropium arborescens 1
Helipterum anthemoides 3
Helleborus argutifolius 1
Helleborus foetidus 1
Helleborus lividus 1
Helleborus niger 1
Helleborus orientalis 1

Helleborus sternii 1
Helleborus x hybridus 1
Hemerocallis cvs. 1
Herpolirion novae-zelandiae 3
Heuchera x brizoides 1

Heuchera micrantha var. diversifolia 'Purpurea' 5
Heuchera sanguinea 1
Hibbertia hypericoides 3
Hibbertia procumbens 3
Hibbertia riparia 3

Hibbertia scandens 3
Hibiscus calyphyllus 1
Hibiscus rosa-sinensis 1
Hibiscus syriacus 1
Hippeastrum sp. 1
Histiopteris incisa 3
Hoheria glabrata 1
Hoheria populnea 1
Hoheria populnea 'Variegata' 5
Hosta crispula 1
Hosta fortunei 1
Hosta fortunei cvs. 5
Hosta 'Grenadier' 5
Hosta 'Halcyon' 5
Hosta lancifolia 1
Hosta montana 1
Hosta plantaginea 1
Hosta sieboldiana 1
Hosta sp. 1
Hosta ventricosa 1
Houttuynia cordata 1
Hovea linearis 3
Howarthia attenuata 4
Howarthia retusa 4
Howea forsteriana 3
Hoya carnosa 1
Hoya lanceolata 1
Humulus lupulus 1
Hyacinthoides hispanica 1
Hyacinthoides non-scripta 1
Hyacinthus orientalis 1
Hydrangea aspera 1
Hydrangea macrophylla 1
Hydrangea petiolaris 1
Hydrocotyle bonariensis 1
Hydrocotyle sibthorpioides 1
Hymenocallis x festalis 1
Hymenophyllum flabellatum 3
Hymenosporum flavum 3
Hypericum androsaemum 1
Hypericum beanii 1
Hypericum coris 1
Hypericum moserianum 1
Hypericum prostrata 1
Hypericum reptans 1
Hypericum sp. 1
Hypoestes floribunda var.*angustifolia* 1
Hypoestes phyllostachya 1
Hypolepis glandulifera 3
Hypolepis rugosula 3
Hypolepis sp. 3
Hyssopus officinalis 1
Iberis amara 1
Iberis sempervirens 1
Iberis sp. 1
Ilex aquifolium 1
Ilex aquifolium 'Variegatum' 5
Ilex paraguariensis 1
Illicium anisatum 1
Impatiens balfourii 1
Impatiens balsamina 1
Impatiens 'New Guinea Hybrids' 5
Imperata cylindrica 'Rubra' 5
Indigofera australis 3
Iochroma grandiflorum 1
Ipheion uniflorum 1
Ipomoea indica 1
Iris confusa 1
Iris ensata 1
Iris foetidissima 1
Iris germanica 1
Iris imbricata 1
Iris japonica 1
Iris latifolia 1
Iris missouriensis 1
Iris pallida 1
Iris pseudocorus 1
Iris reticulata 1
Iris siberica 1
Iris sp. 1
Iris stylosa 1
Iris unguicularis 1
Iris virginica x versicolor 1
Iris xiphium cvs. 5
Isolepis aucklandica 1
Isolepis cernua 1
Isolepis nodosa 3
Isolepis tasmanica 3
Isopogon dubius 3
Ixia maculata 1
Ixia viridiflora 1
Jacobinia pauciflora 4
Jasminum fruticans 1
Jasminum mesnyi 1
Jasminum nudiflorum 1
Jasminum officinale 1
Jasminum polyanthum 1
Jasminum azoricum 1
Jovellana violaceae 1
Jovibarba hirta 1
Juglans nigra 1
Juglans regia 1
Juncus pallidus 1
Juncus sp. 1
Juniperus chinensis 1
Juniperus chinensis 'Variegata' 5
Juniperus communis cvs. 5
Juniperus conferta cvs. 5
Juniperus horizontalis cvs. 5
Juniperus oxycedrus 1
Juniperus sabina cvs. 5
Juniperus sp. 1
Juniperus squamata cvs. 5
Kalanchoe blossfeldiana 1
Kalanchoe longiflora 1
Kalanchoe sp. 1
Kalanchoe thyrsifolia 1
Kalanchoe tomentosa 1
Kennedia nigricans 3
Kennedia prostrata 3
Kennedia rubicunda 3
Kerria japonica 1
Knautia arvensis 1
Knautia macedonica 1
Kniphofia encifolia 1
Kniphofia 'Little Maid' 5
Kniphofia uvaria 1
Koelreuteria paniculata 1
Kolkwitzia amabilis 1
Kunzea ambigua 3
Kunzea ambigua prostrata 3
Kunzea baxterii 3
Kunzea parvifolia 3
Laburnum anagyroides 1
Laburnum x warterii 1
Lachenalia aloides 1
Lactuca sativa 1
Lagarostrobus cupressinum 3
Lagarostrobus franklinii 3
Lagerstroemia indica 1
Lagunaria patersonii 1
Lagurus ovatus 1
Lamium galeobdolon 1
Lamium maculatum 1
Lampranthus aurantiacus cvs. 5
Lampranthus aureum 1
Lampranthus blandus 1
Lampranthus coccineus 1
Lampranthus multiradiatus 1
Lampranthus spectabilis 1
Lantana camara 3
Lapageria rosea 1
Larix kaempferi 1
Larix sp. 1
Lasiopetalum baueri 3
Lasiopetalum macrophyllum 3
Lasiopetalum micranthum 3
Lastreopsis acuminata 3
Lathyrus latifolius 1
Lathyrus odoratus 1
Laurus azorica 1
Laurus nobilis 1
Lavatera maritima 1
Lavatera sp. 1
Lavendula allardii 1
Lavendula angustifolia 1
Lavendula angustifolia 'Alba' 5
Lavendula angustifolia 'Hidcote' 5
Lavendula angustifolia 'Munstead' 5
Lavendula cvs. 1
Lavendula dentata 1
Lavendula multifida 1
Lavendula pinnata 1
Lavendula stoechas 1
Lavendula viridis 1
Leonotis alba 1
Leonotis leonurus 1
Lepidosperma gladiatum 3
Lepidosperma sp. 3
Leptecophylla juniperina ssp. *parvifolia* 4
Leptomeria drupacea 3
Leptorhynchos squamatus 3
Leptospermum cardwellii 3
Leptospermum glaucescens 3
Leptospermum grandiflorum 3
Leptospermum juniperinum 3
Leptospermum laevigatum 3
Leptospermum lanigerum 3
Leptospermum lanigerum var. *macrocarpum* 3
Leptospermum nitidum 3
Leptospermum petersonii 3
Leptospermum rotundifolium 3
Leptospermum riparium 3
Leptospermum rupestre 3
Leptospermum scoparium 3
Leptospermum scoparium 'Nana' 5
Leptospermum scoparium var. *eximium* 3
Leptospermun sp. 3
Leucadendron argenteum 1
Leucadendron laureolum 1
Leucadendron 'Red Devil' 5
Leucadendron salignum 1
Leucadendron sp. 1
Leucadendron strobilinum 1
Leucadendron tinctum 1
Leucanthemum x superbum 1
Leucajum vernum 1
Leucophyta brownii 3
Leucopogon collinus 3
Leucopogon parviflorus 3
Leucospermum conocarpodendron 1
Leucospermum cordifolium 1
Leucospermum glabrum 1
Leucospermum reflexum 1
Leucospermum salicifolium 1
Leucothoe fontanesiana 1
Levisticum officinale 1
Lewisia cotyledon 1
Leycesteria formosa 1
Liatrus spicata 1
Libertia caerulescens 3
Libertia peregrinans 1
Libertia pulchella 3
Ligustrum japonicum 'Rotundifolium' 5
Ligustrum ovalifolium 'Aureum' 5
Ligustrum undulatum 1
Ligustrum vulgare 1
Lilium 'Asiatic Hybrid' 5
Lilium candidum 1
Lilium lancifolium 1
Lilium longiflorum 1
Lilium martagon 1
Lilium 'Oriental Hybrid' 5
Lilium pardalinum 1
Lilium regale 1
Lilium sp. 1
Limonium latifolium 1
Limonium perezii 1
Limonium sinuatum 1
Linaria maroccana 1
Linaria vulgaris 1
Linum perenne 1
Lippia citriodora 1
Liquidambar formosana 1
Liquidambar styraciflua 1

Liriodendrum tulipiferum	1	*Lysimachia nummularia*	1	*Melaleuca ericifolia*	3	*Mimulus x hybridus*	1	*Nepeta sibirica*	1	*Olearia stellulata*	3
Liriope muscari	1	*Lythrum salicaria*	1	*Melaleuca gibbosa*	3	*Mirabilis jalapa*	1	*Nephrolepis exultata* cvs.	5	*Olearia tasmanica*	3
Lithodora diffusa	1	*Macropidia fuliginosa*	3	*Melaleuca hypericoides*	3	*Mirabilis multiflora*	1	*Nephrolepis cordifolia*	1	*Olearia tenuifolia*	3
Lithops sp.	1	*Macrozamia communis*	3	*Melaleuca incana*	3	*Monarda didyma*	1	*Nerine bowdenii*	1	*Olearia viscosa*	3
Lobelia cardinalis	1	*Macrozamia spiralis*	3	*Melaleuca laterita*	3	*Monotoca glauca*	3	*Nerine filifolia*	1	*Omphalodes verna*	1
Lobelia alata	1	*Maesa montana*	3	*Melaleuca linariifolia*	3	*Monstera deliciosa*	1	*Nerine flexuosa* 'Alba'	5	*Ophiopogon jaburan*	1
Lobelia erinus	1	*Magnolia campbellii*	1	*Melaleuca nesophila*	3	*Morus nigra*	1	*Nerine fothergillii*	1	*Ophiopogon japonicus*	1
Lobelia gibberoa	1	*Magnolia grandiflora*	1	*Melaleuca pulchella*	3	*Muehlenbeckia axillaris*	1	*Nerine sarniensis*	1	*Ophiopogon planiscapus* 'Nigrescens'	15
Lobelia x gerardii	1	*Magnolia liliflora*	1	*Melaleuca pustulata*	3	*Muehlenbeckia gunnii*	3	*Nerium oleander*	1	*Opuntia stricta*	1
Lobelia laxiflora var. *angustifolia*	1	*Magnolia x loebneri*	1	*Melaleuca* 'Revolution Gold'	5	*Murraya paniculata*	1	*Nicotiana alata*	1	*Origanum majorana*	1
Lobelia pratiodes	1	*Magnolia macrophylla*	1	*Melaleuca* 'Snowstorm'	5	*Muscari armeniacum*	1	*Nicotiana x sanderae*	1	*Origanum vulgare*	1
Lobularia maritima	1	*Magnolia x soulangeana*	1	*Melaleuca* sp.	3	*Myoporum floribundum*	3	*Nierembergia repens*	1	*Ornithogalum longibracteatum*	1
Lomandra longifolia	3	*Magnolia* sp.	1	*Melaleuca squamea*	3	*Myoporum insulare*	3	*Nigella damascena*	1	*Ornithogalum narbonense*	1
Lomatia polymorpha	3	*Magnolia stellata*	1	*Melaleuca squarrosa*	3	*Myoporum parvifolium*	3	*Notelaea ligustrina*	3	*Ornithogalum umbellatum*	1
Lomatia tinctoria	3	*Mahonia japonica*	1	*Melaleuca styphelioides*	3	*Myosotidium hortensia*	1	*Nothofagus alessandri*	1	*Osmanthus delavayi*	1
Lomatia tinctoria x polymorpha	3	*Mahonia lomariifolia*	1	*Melianthus major*	1	*Myosotis sylvatica*	1	*Nothofagus alpina*	1	*Osmanthus heterophyllus*	1
Lonicera americana	1	*Mahomia nevinii*	1	*Melissa officinalis*	1	*Myriophyllum aquaticum*	1	*Nothofagus antarctica*	1	*Osmanthus heterophyllus* 'Variegatus'	5
Lonicera etrusca	1	*Malcolmia maritima*	1	*Mentha x piperata*	1	*Myrsine africana*	1	*Nothofagus betuloides*	1	*Osteospermum ecklonis*	1
Lonicera caprifolia	1	*Malosma laurina*	1	*Mentha x piperata* var. *citrata*	1	*Myrtus communis*	1	*Nothofagus cunninghamii*	3	*Osteospermum fruticosum*	1
Lonicera hilderbrandiana	1	*Malus 'Ballerina'*	5	*Mentha requienii*	1	*Myrtus communis* 'Variegata'	5	*Nothofagus dombeyi*	1	*Osteospermum jucundum*	1
Lonicera japonica	1	*Malus domestica*	1	*Mentha x rotundifolia*	1	*Myrtus* sp.	1	*Nothofagus fusca*	1	*Osteospermum* cvs.	5
Lonicera maackii	1	*Malus floribunda*	1	*Mentha spicata*	1	*Myrtus ugni*	1	*Nothofagus gunnii*	3	*Oxalis hirta*	1
Lonicera nitida	1	*Malus hupehensis*	1	*Mesembryathemum crystallinum*	1	*Nablonium calycoroides*	3	*Nothofagus menziesii*	1	*Oxalis massoniana*	1
Lonicera sp.	1	*Malus ioensis*	1	*Metasequoia glyptostroboides*	1	*Nandina domestica*	1	*Nothofagus moorei*	3	*Oxalis tuberosa*	1
Lonicera tomentella	1	*Malus*, 'Ornamental Crabapple'	5	*Metrosideros diffusa*	1	*Nandina domestica* 'Nana'	5	*Nothogagus obliqua*	1	*Oxylobium ellipticum*	3
Lophomyrtus 'Black Stallion'	5	*Malus purpurea*	1	*Metrosideros excelsa*	1	*Narcissus bulbocodium*	1	*Nothofagus pumilio*	1	*Ozothamnus ferrugineus*	3
Lophomyrtus bullata	1	*Malus sylvestris*	1	*Metrosideros excelsa* 'Variegata'	5	*Narcissus* cvs.	1	*Nymphaea* sp.	1	*Ozothamnus purparescens*	3
Lophomyrtus bullata 'Variegatum'	5	*Malva moschata*	1	*Metrosideros thomasiae*	1	*Narcissus papyraceus*	1	*Nymphoides peltata*	1	*Ozothamnus rosmarinifolius*	3
Loropetalum chinense	1	*Mandevilla amoena* 'Alice du Pont'	5	*Metrosideros umbellatus*	1	*Narcissus poeticus*	1	*Ocimum basilicum*	1	*Ozothamnus scutellifolius*	3
Lotus berthlotii	1	*Mandevilla laxa*	1	*Michelia doltsopa*	1	*Narcissus rupicola*	1	*Oldenbergia grandis*	1	*Ozothamnus thyrsoideus*	3
Luculia gratissima	1	*Mandevilla x amoena*	1	*Michelia figo*	1	*Nasturtium officinale*	1	*Oenothera fruticosa*	1	*Pachyveria pachyphtoides*	1
Ludwigia repens	3	*Maranta leuconeura*	1	*Michelia yunnanensis*	1	*Nematanthus gregarius*	1	*Oenothera missouriensis*	1	*Paeonia lactiflora* cvs.	5
Luma apiculata	1	*Matthiola incana*	1	*Micrantheum hexandrum*	3	*Nematanthus tropicana*	1	*Oenethera speciosa* 'Rosea'	5	*Paeonia lutea ludlowii*	1
Lunaria annua	1	*Mazus reptans*	1	*Microcachrys tetragona*	3	*Nematolepis squamea*	3	*Olea europaea*	1	*Paeonia suffructicosa*	1
Lupinus arboreus	1	*Mecanopsis betonicifolia*	1	*Micromyrtus ciliatum*	3	*Nemesia foetens*	1	*Olearia algida*	3	*Pandorea pandorana*	3
Lupinus, 'Russell Hybrids'	5	*Mecanopsis cambrica*	1	*Microsorium diversifolium*	3	*Nemesia strumosa*	1	*Olearia argophylla*	3	*Pandorea jasminoides*	3
Lychnis coronaria	1	*Mecanopsis grandis*	1	*Microstrobus niphophilus*	3	*Nemophila menziesii*	1	*Olearia axillaris*	3	*Papaver atlanticum*	1
Lycium ferocissimum	1	*Melaleuca armillaris*	3	*Milium effusum*	1	*Neomarica northiana*	1	*Olearia glandulosa*	3	*Papaver nudicaule*	1
Lycopersicon esculentum	1	*Melaleuca calothamnoides*	3	*Mimulus layneae*	1	*Nepeta cataria*	1	*Olearia lirata*	3	*Papaver orientale*	1
Lysichiton americanum	1	*Melaleuca decussata*	3	*Mimulus luteus*	1	*Nepeta x faassenii*	1	*Olearia phlogopappa*	3	*Papaver rhoeas*	1
Lysimachia clethroides	1	*Melaleuca diosmifolia*	3	*Mimulus moschatus*	1	*Nepeta racemosa* cvs.	1	*Olearia ramulosa*	3	*Papaver somniferum*	1

Papaver sp. 1
Paphiopedilum, Hybrids 5
Parahebe catarractae 3
Parahebe linifolia 3
Paraserianthes lophantha 3
Parrotia persica 1
Parthenocissus quinquefolia 1
Parthenosissus tricuspida 1
Passiflora edulis 1
Passiflora mollissima 1
Pastinaca sativa 1
Patersonia occidentalis 3
Pedilanthus tithymaloides 1
Pelargonium australe 3
Pelargonium capitatum 1
Pelargonium crispum 1
Pelargonium domesticum 1
Pelargonium, 'Ivy leafed hybrid' 5
Pelargonium 'Mabel Grey' 5
Pelargonium odoratissimum 1
Pelargonium peltatum 1
Pelargonium sp. 1
Pelargonium tomentosum 1
Pelargonium, 'Zonal Hybrid' 5
Pellaea falcata 1
Peltiphyllum peltatum 4
Pennisetum setaceum 1
Penstemon barbartus 1
Penstemon heterophyllus 1
Penstemon sp. 1
Penstemon x gloxiniodes 1
Penstemon 'Zuriblau' 5
Pentapogon quadrifidus 3
Peperomia caperata 1

Pepino dulcis 1
Pericallis lanata 1

Pericallis x hybrida 1

Perovskia atriplicifolia 1
Persea americana 1
Persicaria affinis 1
Persicaria capitata 1
Persicaria odorata 1
Petasites fragrans 2
Petrorhagia sp. 2
Petroselinum crispum 1
Petunia hybrida 1
Phacelia campanularia 1
Phaedranassa carnioli 1
Phaseolus coccineus 1
Phaseolus vulgaris 1
Phebalium daviesii 3
Phebalium montanum 3
Phebalium squameum 3
Philodelphus coronarius 1
Philadelphus delavayi 1
Philadelphus 'Lemoinei' 5
Philadelphus mexicanus 1
Philadelphus x pendulifolius 1
Philadelphus sp. 5
Philadelphus 'Virginalis' 5
Philesia magellanica 1
Philodendron bipinnatifidum 1
Philodendron 'Xanadu' 5
Philotheca virgatus 3
Phlomis fruticosa 1
Phlomis italica 1
Phlomis russeliana 1
Phlox condensata 1
Phlox drummondii 1
Phlox paniculata 1
Phoenix roebelenii 1
Phormium cookianum cvs. 5
Phormium tenax 1
Phormium tenax 'Bronze Baby' 5
Phormium tenax 'Purpureum' 5

Photinia sp. 1
Phuopsis stylosa 1

Phygelius aequalis 1

Phygelius capensis 1
Phyllocladus aspleniifolius 3
Phyllostachys aurea 1
Phyllostachys nigra 1
Phyllota diffusa 3
Phymatodes diversifolium 3
Phymatosorus pustulatus 3
Physalis peruviana 1
Physostegia virginiana 1
Picea abies 1
Picea abies 'Nana' 5
Picea glauca 1
Picea glauca var. *albertiana* 1
Picea pungens 1
Picea pungens 'Pendans' 5
Picea sp. 1
Picea wilsonii 1
Pieris formosa var. *forrestii* 1
Pieris japonica 1
Pieris japonica 'Variegata' 5
Pilea cadierei 1
Pilea involucrata 1
Pimelea ferruginea 3
Pimelea filiformis 3
Pimelea flava 3
Pimelea glauca 3
Pimelea humilis 3
Pimelea ligustrina 3
Pimelea linearis 3
Pimelea nivea 3
Pimenta officinalis 1
Pimpinella anisum 1
Pinus mugo 1
Pinus patula 1
Pinus pumila 1
Pinus radiata 1
Pistacia chinensis 1
Pisum sativum 1

Pittosporum bicolor 3
Pittosporum crassifolium 'Variegatum' 5
Pittosporum eugenoides 'Variegatum' 5
Pittosporum 'Garnettii' 5
Pittosporum 'Irene Patterson' 5
Pittosporum tenuifolium cvs. 5
Pittosporum tenuifolium 'Purpureum' 5
Pittosporum tobira 1
Pittosporum undulatum 3
Platycerium bifurcatum 3
Platycerium superbum 1
Platycodon grandiflorus 1
Platylobium formosum 3
Plectranthus argentatus 1
Plectranthus australis 1
Plectranthus ciliatus 1
Plectranthus verticillatus 1
Pleioblastus auricomus 1
Pleioblastus humilis pumilis 1
Pleioblastus pygmaeus 1
Pleioblastus variegatus 1
Pleioblastus viridistriatus 1
Pleione formosanum 1
Plumbago auriculata 1
Poa australis 3
Poa labillardiera 3
Poa poiformis 3
Poa rodwayii 3
Poa siberiana 3
Podalyria sericea 1
Podocarpus lawrencei 3
Podranea ricasoliana 1
Polemonium 'Brise d' Anjou' 5
Polemonium caeruleum 1
Polianthes tuberosa 1
Polygala myrtifolia 1
Polygonatum hybridum 1
Polygonatum multiflorum 1
Polygonatum odoratum 1
Polygonum aviculare 1
Polygonum polygonatum 1

Polystichum formosum 1
Polystichum proliferum 3

Polystichum setiferum 3

Polytrichum juniperum 3
Pomaderris apetala 3
Pomaderris elliptica 3
Pomaderris phylicifolia 3
Pomaderris pilifera 3
Pomaderris racemosa 3
Populus alba 1
Populus deltoides 1
Populus italica 'Nigra' 5
Portulaca grandiflora 1
Portulacaria afra 1
Potentilla fruticosa 1
Potentilla recta 1
Poterium sanguisorba 3
Pratia pendunculata 3
Pratia puberula 3
Prenanthes trifoliata 4
Primula auriculata 1
Primula beesiana 1
Primula forrestii 1
Primula japonica 1
Primula malacoides 1
Primula obconica 1
Primula seiboldii 1
Primula sp. 1
Primula vialii 1
Primula vulgaris 1
Primula x polyantha 1
Prionotes cerinthoides 3
Prostanthera baxterii 3
Prostanthera cuneata 3
Prostanthera lasianthos 3
Prostanthera ovalifolia 3
Prostanthera rotundifolia 3
Prostanthera scutellariodes 3
Prostanthera sp. 3
Protea cynaroides 1
Protea neriifolia 1

Protea sp. 1
Prunus armeniaca 1

Prunus avium 1

Prunus blireana 1
Prunus cerasifera 1
Prunus cerasifera 'Elvins' 5
Prunus cerasifera 'Nigra' 5
Prunus cerasus 1
Prunus domestica 1
Prunus dulcis 1
Prunus 'Flora Plena' 5
Prunus laurocerasus 1
Prunus lusitanica 1
Prunus 'Okumiyako' 5
Prunus padus 1
Prunus persica 1
Prunus persica 'Alba Plena' 5
Prunus persica 'Magnifica' 5
Prunus persica var. *nectarina* 1
Prunus salicina 1
Prunus serrulata 'Sato-zakura' 5
Prunus 'Mt. Fuji' 5
Prunus serrulata 1
Prunus sp. 1
Pseudopanax lessonii 1
Pseudotsuga menziesii 1
Psoralea pinnata 1
Pteridium esculentum 3
Pteris argynaea 1
Pteris multifida 1
Pteris sp. 1
Pteris tremula 1
Ptilotis obovatus 3
Ptilotis spathulatus 3
Pulmonaria officinalis 1
Pulmonaria saccharata 1
Punica granatum 1
Punica granatum var. *nana* 1
Pulsatilla vulgaris 1
Pultanaea daphnoides 3
Pultanaea daphnoides var. *obcordata* 3

Pultanaea hibbertioides 3
Pultenaea juniperina 3

Pultanaea pendunculata 3

Pyracantha sp. 1
Pyrus communis 1
Pyrus pyrifolia 1
Pyrus salicifolia 1

Pyrus ussuriensis	1	*Rhododendron eximium*	1	*Rodgersia aesculifolia*	1	*Salvia leucantha*	1	*Schizanthus pinnatus*	1	*Silene finbriata*	1
Quercus coccinea	1	*Rhododendron falconeri*	1	*Rodgersia podophylla*	1	*Salvia nemorosa*	1	*Schizostylis coccinea*	1	*Silene keiskei* var. *minor*	1
Quercus palustris	1	*Rhododendron fictolacteum*	1	*Romneya coulteri*	1	*Salvia officinalis*	1	*Schlumbergera* cvs.	5	*Silene* sp.	1
Quercus robur	1	*Rhododendron fortunei*	1	*Romulea bulbicodium*	1	*Salvia officinalis* 'Purparescens'	5	*Schlumbergera truncata*	1	*Silene uniflora*	1
Quercus sp.	1	*Rhododendron fragrantissima*	1	*Rosa banksiae*	1	*Salvia patens*	1	*Scilla peruviana*	1	*Silene vulgaris*	1
Quercus suber	1	*Rhododendron fulvum*	1	*Rosa bracteata*	1	*Salvia rutilans*	1	*Scilla siberica*	1	*Sinningia speciosa*	1
Ranunculus asiaticus	1	*Rhododendron grande*	1	*Rosa chinensis* 'Viridiflora'	5	*Salvia* sp.	1	*Scilla verna*	1	*Sisyrynchium angustifolium*	1
Ranunculus ficaria	1	*Rhododendron gratum*	1	*Rosa gallica*	1	*Salvia splendens*	1	*Scleranthus biflorus*	1	*Sisyrynchium californicum*	1
Ranunculus parnassifolius	1	*Rhododendron griersonianum*	1	*Rosa moschata*	1	*Salvia uliginosa*	1	*Scutellaria indica*	1	*Sisyrynchium* 'Devon Skies'	5
Ranunculus repens	1	*Rhododendron griffithianum*	1	*Rosa moyesii*	1	*Salvia x sylvestris*	1	*Sedum acre*	1	*Sisyrynchium idahoense*	1
Ranunculas sp.	1	*Rhododendron hodgsonii*	1	*Rosa rubiginosa*	1	*Sambucus gaudichaudiana*	3	*Sedum alboroseum*	1	*Sisyrynchium* sp.	1
Raphanus sativus	1	*Rhododendron johnstoneanum*	1	*Rosa rugosa*	1	*Sambucus nigra*	1	*Sedum burrito*	1	*Solanum aviculare*	3
Raphanus sativus longipinnatus	1	*Rhododendron laetum*	1	*Rosa* sp.	1	*Sandersonia aurantiaca*	1	*Sedum commixtum*	1	*Solanum jasminoides*	1
Raphiolepis indica	1	*Rhododendron luteum*	1	*Rosmarinus officinalis*	1	*Santolina chamaecyparissus*	1	*Sedum morganianum*	1	*Solanum melongena*	1
Raphiolepis x delacourii	1	*Rhododendron macabeanum*	1	*Rubia tinctoria*	1	*Santolina rosmarinifolia*	1	*Sedum nussbaumerianum*	1	*Solanum muricatum*	1
Rehmannia elata	1	*Rhododendron maddenii*	1	*Rubus fruticosus*	1	*Sapium sebiferum*	1	*Sedum pachyphyllum*	1	*Solanum rantonnetii*	1
Restio australis	3	*Rhododendron magnificum*	1	*Rubus gunnianus*	1	*Saponaria officinalis*	1	*Sedum palmeri*	1	*Solanum seaforthianum*	1
Restio tetraphylla	3	*Rhododendron* 'Mollis Azalea'	5	*Rubus idaeus*	1	*Sarcococca confusa*	1	*Sedum rubrotinctum*	1	*Solanum tuberosum*	1
Retama monosperma	1	*Rhododendron montroseanum*	1	*Rubus idaeus* cvs.	5	*Sarcococca humilis*	1	*Sedum spathulifolium*	1	*Soleirolia soleirolii*	1
Rhagodia candolleana	3	*Rhododendron nuttallii*	1	*Rudbeckia fulgida*	1	*Sarracenia flava*	1	*Sedum* sp.	1	*Solenostemon scutellarioides*	1
Rhaphiolepis indica	1	*Rhododendron ponticum*	1	*Rudbeckia hirta*	1	*Sarracenia purpurea*	1	*Sedum spectabile*	1	*Solidago* sp.	1
Rheum australe	1	*Rhododendron protistum*	1	*Rulingia hermanniifolia*	3	*Satureja hortensis*	1	*Sedum spurium*	1	*Solidago virgaurea*	1
Rheum palmatum	1	*Rhododendron sidereum*	1	*Rumex rugosus*	1	*Satureja montana*	1	*Sedum telephium*	1	*Sollya heterophylla*	3
Rheum x cultorum	1	*Rhododendron sinogrande*	1	*Sagina subulata*	1	*Saxifraga cordifolia*	1	*Selliera radicans*	1	*Sophora tetraptera*	1
Rhipsalis cereuscula	1	*Rhododendron* sp.	1	*Saintpaulia* cvs.	5	*Saxifraga exerata* subsp.*moschata*	1	*Sempervivum arachnoideum*	1	*Sorbus aucuparia*	1
Rhodanthe anthemoides	3	*Rhododendron thomsonii*	1	*Salix babylonica*	1	*Saxifraga x angelica*	1	*Sempervivum* cvs.	5	*Sorbus forrestii*	1
Rhodanthe chlorocephala	3	*Rhododendron veitchianum*	1	*Salix caprea*	1	*Saxifraga paniculata*	1	*Sempervivum tectorum*	1	*Sorbus* sp.	1
Rhododendron arboreum	1	*Rhododendron yakushimanum*	1	*Salix chilensis*	1	*Saxifraga* sp.	1	*Senecio cineraria*	3	*Sparaxis tricolor*	1
Rhododendron augustinii	1	*Rhodohypoxis baurii*	1	*Salix fragilis*	1	*Saxifraga stolonifera*	1	*Senecio cirrus*	3	*Sparteum junceum*	1
Rhododendron basilicum	1	*Ribes glossularia*	1	*Salix tortuosa*	1	*Saxifraga x urbium*	1	*Senecio linearifolius*	3	*Spathiphyllum floribundum*	1
Rhododendron bureauvii	1	*Ribes nigrum*	1	*Salvia argentea*	1	*Scabiosa caucasica*	1	*Senecio elegans*	3	*Spinacia oleracea*	1
Rhododendron burmanicum	1	*Ribes rubrum*	1	*Salvia blepharophylla*	1	*Scabiosa lucida*	1	*Senecio mandraliscae*	3	*Spinifex sericeus*	3
Rhododendron calophytum	1	*Ribes sanguineum*	1	*Salvia chaemadryoides*	1	*Scabiosa* sp.	1	*Senecio pinnatifolius*	3	*Spiraea cantoniensis*	1
Rhododendron campanulatum	1	*Ribes sativum*	1	*Salvia coccinea*	1	*Scadoxus puniceus*	1	*Senecio rowleyanus*	3	*Spiraea filipendula*	1
Rhododendron chrysomanium	1	*Ribes uva-crispa*	1	*Salvia corrugata*	1	*Scaevola aemula*	3	*Senecio serpens*	3	*Spiraea japonica*	1
Rhododendron ciliatum x edgeworthii	1	*Richea acerosa*	3	*Salvia elegans*	1	*Scaevola hookeri*	3	*Senecio* sp.	3	*Spirea nipponica*	1
Rhododendron citriniflorum	1	*Richea dracophylla*	3	*Salvia farinacea*	1	*Scaevola stricta*	3	*Senecio x hybridus*	3	*Spiraea thunbergii*	1
Rhododendron crassum	1	*Richea pandanifolia*	3	*Salvia fulgens*	1	*Schefflera arboricola*	1	*Sequoia sempervirens*	1	*Spirea x bumalda*	1
Rhododendron davidsonianum	1	*Richea scoparia*	3	*Salvia greggii*	1	*Schima brevifolia*	1	*Serruria florida*	1	*Sprekelia formosissima*	1
Rhododendron delavayi	1	*Ricinocarpus pinifolius*	3	*Salvia guaranitica*	1	*Schinus molle*	1	*Silene alba*	1	*Sprengelia incarnata*	3
Rhododendron diaprepes	1	*Robinia pseudoacacia*	1	*Salvia involucrata*	1	*Schinus terebinthifolius*	1	*Silene coeli-rosa*	1	*Spyridium microphyllus*	3

Spyridium obcordatum	3	*Telopea x* 'Shady Lady'	5	*Tradescantia*, 'Andersoniana Group'	5	*Veronica* sp.	1	*Westringia fruticosa*	3
Spyridium ulicilum	3	*Telopea speciosissima*	3	*Tradescantia pallida* 'Purple Heart'	5	*Veronica spicata*	1	*Westringia fruticosa* 'Variegata'	5
Spyridium vexilliferum	3	*Telopea truncata*	3	*Tradescantia zebrina*	1	*Veronicastrum virginicum*	1	*Westringia glabra*	3
Stachys byzantina	1	*Tetragonia implexicoma*	1	*Triglochin procera*	3	*Verticordia chrysantha*	3	*Westringia rigida*	3
Steirodiscus tagetes	1	*Tetratheca pilosa*	3	*Trillium sessile*	1	*Verticordia plumosa*	3	*Westringia rubiaefolia*	3
Stellaria holostea	1	*Teucrium fruticans*	1	*Triteleia laxa*	1	*Viburnum carlesi*	1	*Wisteria floribunda*	1
Stellaria pungens	1	*Teucrium marum*	1	*Trochocarpa thymifolia*	3	*Viburnum corrugatum*	1	*Wisteria sinensis*	1
Stephanandra tanakae	1	*Teucrium* sp.	1	*Tropaeolum tricolorum*	1	*Viburnum davidii*	1	*Xanthorrhea australis*	3
Stephanotis floribunda	1	*Thalictrum aquilegiifolium*	1	*Tropaeolum* sp.	1	*Viburnum furcatum*	1	*Xyline soleirolii*	1
Stenocarpus sinuatus	3	*Thalictrum delavayi*	1	*Tulbaghia violacea*	1	*Viburnum japonicum*	1	*Xyris operculata*	3
Stewartia monodelpha	1	*Themeda triandra*	3	*Tulipa* sp.	1	*Viburnum opulus*	1	*Yucca* sp.	1
Stipa mollis	1	*Thryptomeme calicyna*	3	*Typha* sp.	1	*Viburnum plicatum*	1	*Zantedeschia aethiopica*	1
Stipa stychoides	1	*Thryptomeme micrantha*	3	*Ugni mollinae*	1	*Viburnum plicatum* var. *tomentosum*	1	*Zantedeschia elliottiana*	1
Stokesia laevis	1	*Thryptomene saxicola*	3	*Ulex europaeus*	1	*Viburnum rhytidophyllum*	1	*Zantedeschia*, 'New Zealand Mixed Hybrids'	5
Strelitzia reginae	1	*Thuja koraiensis*	1	*Ulmus glabra* 'Lutescens'	5	*Viburnum tinus*	1	*Zantedeschia rehmannii*	1
Streptocarpus Hybrids	5	*Thuja occidentalis* cvs.	5	*Ulmus minor*	1	*Viburnum x burkwoodii*	1	*Zea mays*	1
Streptocarpus rexii	1	*Thuja orientalis* cvs.	5	*Ulmus minor* 'Variegata'	5	*Vicia faba*	1	*Zephyranthes candida*	1
Streptosolen jamesonii	1	*Thuja plicata fastigata*	1	*Ulmus parvifolia*	1	*Vigna caracella*	1	*Ziera arborescens*	3
Stylidium armeria	3	*Thuja plicata* 'Zebrina'	5	*Ulmus procera*	1	*Villarsia reniformis*	3	*Ziera cytisoides*	3
Stylidium graminifolium	3	*Thuja plicata*	1	*Ursinia anthemoides*	1	*Vinca major*	1	*Ziera littoralis*	3
Sutera cordata	1	*Thuja* sp.	1	*Ursinia sericea*	1	*Vinca major* 'Variegata'	5	*Zingiber officinale*	1
Syagrus romanzoffiana	1	*Thujopsis dolabrata*	1	*Vaccinium corumbosum*	1	*Vinca minor*	1	*Zinnia elegans*	1
Symphyandra hofmannii	1	*Thymus* sp.	1	*Valeriana officinalis*	1	*Viola cornuta*	1		
Symphoricarpus albus	1	*Thymus herba-barona*	1	*Valerianella locusta olitoria*	1	*Viola hederacea*	1		
Symphoricarpos sp.	1	*Thymus vulgaris*	1	*Vallota speciosa*	4	*Viola labradorica*	1		
Symphytum officinale	1	*Thymus x citriodorus*	1	*Vancouveria hexandra*	1	*Viola odorata*	1		
Syngonium podophyllum	1	*Thysanotus patersonii*	3	*Veltheimia capensis*	1	*Viola riviniana*	1		
Syringa sp.	1	*Tibouchina laxa*	1	*Veratrum album*	1	*Viola x wittrockiana*	1		
Syringa vulgaris	1	*Tibouchina macrantha*	1	*Verbascum nigrum*	1	*Virgilia capensis*	1		
Syzygium luehmannii	3	*Tibouchina urvilleana*	1	*Verbascum olimpicum*	1	*Vitis coignetiae*	1		
Tagetes erecta	1	*Tigridia pavonia*	1	*Verbena bonariensis*	1	*Vitis vinifera*	1		
Tagetes patula	1	*Tilia cordata*	1	*Verbena florida*	1	*Wachendorfia thyrsifolia*	1		
Tagetes tenuifolia	1	*Todea barbara*	3	*Verbena x hybrida*	1	*Wahlenbergia communis*	3		
Tamarix aphylla	1	*Toona sinensis*	1	*Verbena officinalis*	1	*Wahlenbergia stricta*	3		
Tanacetum argenteum	1	*Townsendia hookeri*	1	*Verbena peruviana*	1	*Washingtonia filifera*	1		
Tanacetum cinerariifolium	1	*Trachelium caeruleum*	1	*Verbena rigida*	1	*Watsonia borbonica* ssp.*ardernei*	1		
Tanacetum parthenium	1	*Trachelospermun jasminoides*	1	*Verbena tenera*	1	*Watsonia meriana*	1		
Tanacetum vulgare	1	*Trachycarpus fortunei*	1	*Veronica austriaca cvs*	1	*Weigela florida*	1		
Tasmannia lanceolata	3	*Trachycarpus martianum*	1	*Veronica formosa*	3	*Weigela florida* 'Variegata'	5		
Taxus baccata	1	*Tradescantia fluminensis*	1	*Veronica longiflora*	1	*Westringia angustifolia*	3		
Tecomaria capensis	1	*Tradescantia fluminensis* 'Variegata'	5	*Veronica peduncularis*	1	*Westringia brevifolia* var. *raleighii*	3		